

FIGURE 1A

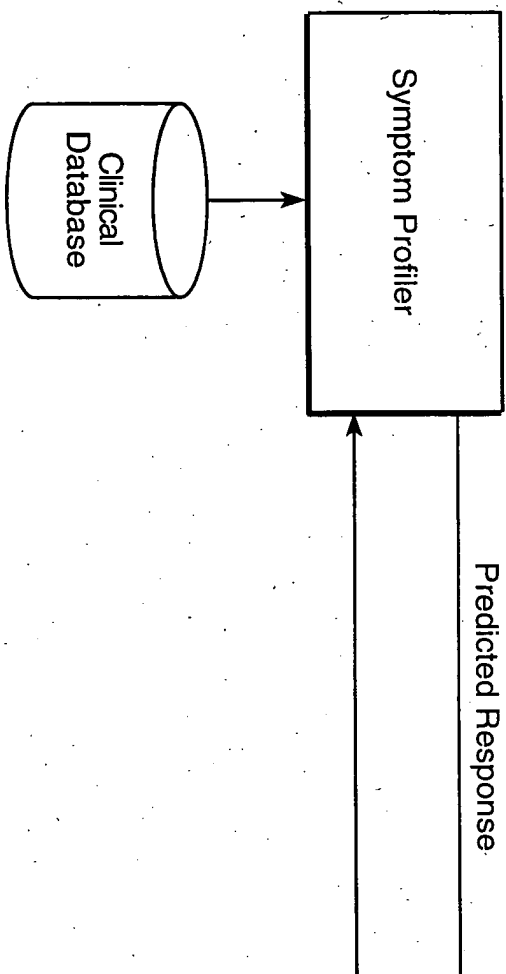


FIGURE 1B

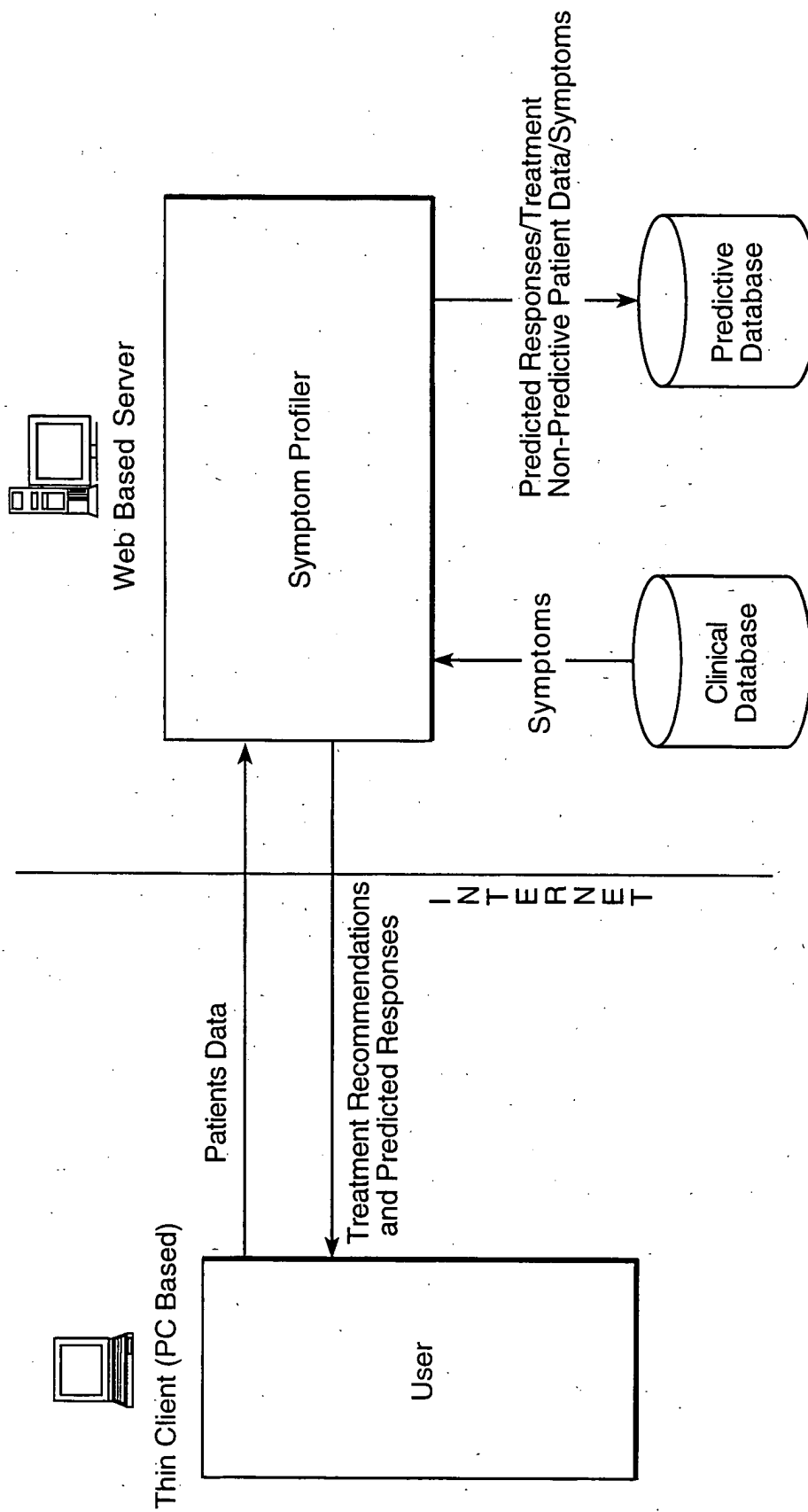


FIGURE 1C

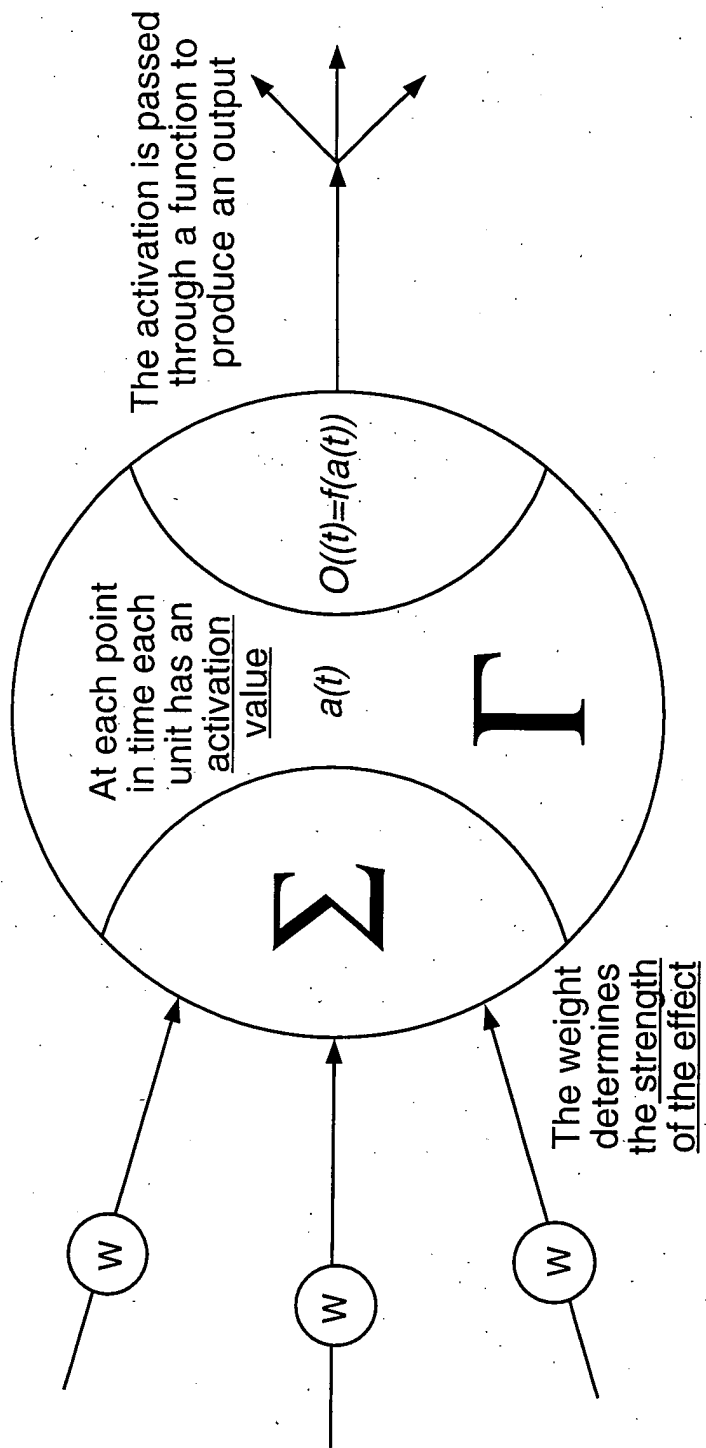


FIGURE 2

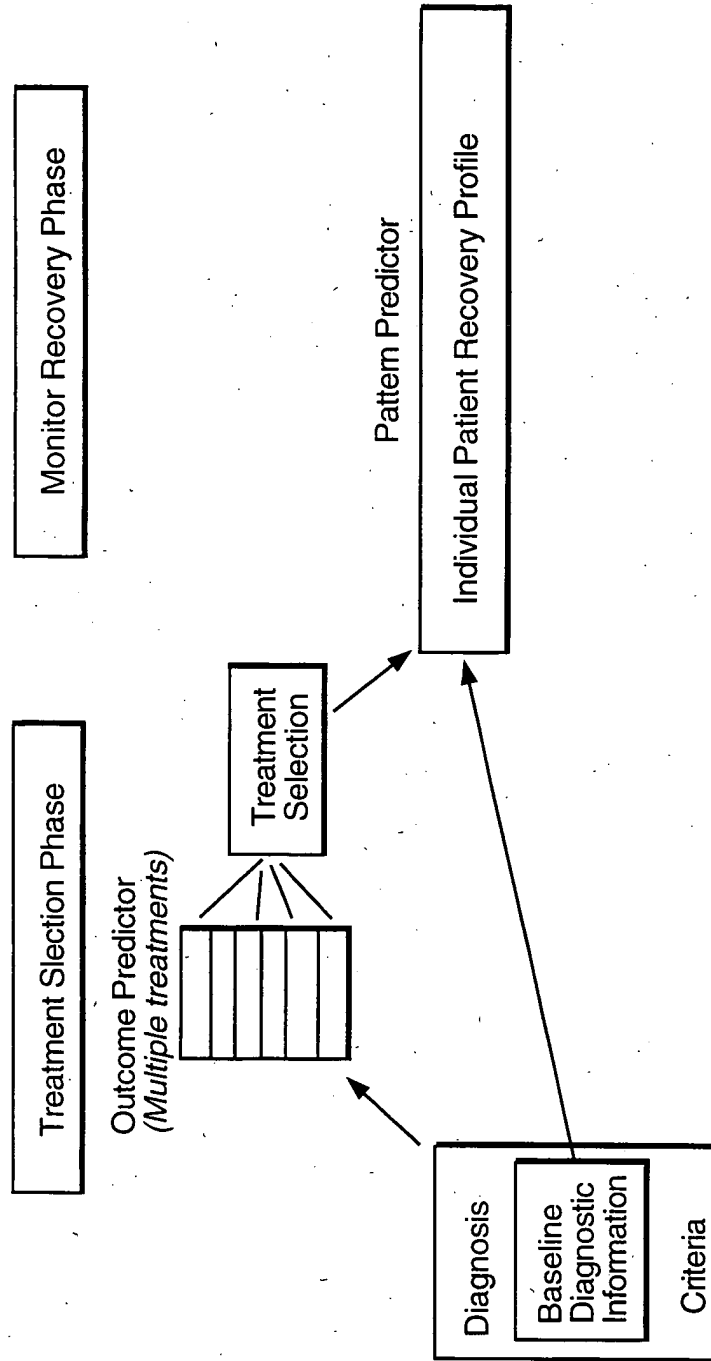


FIG. 3-2

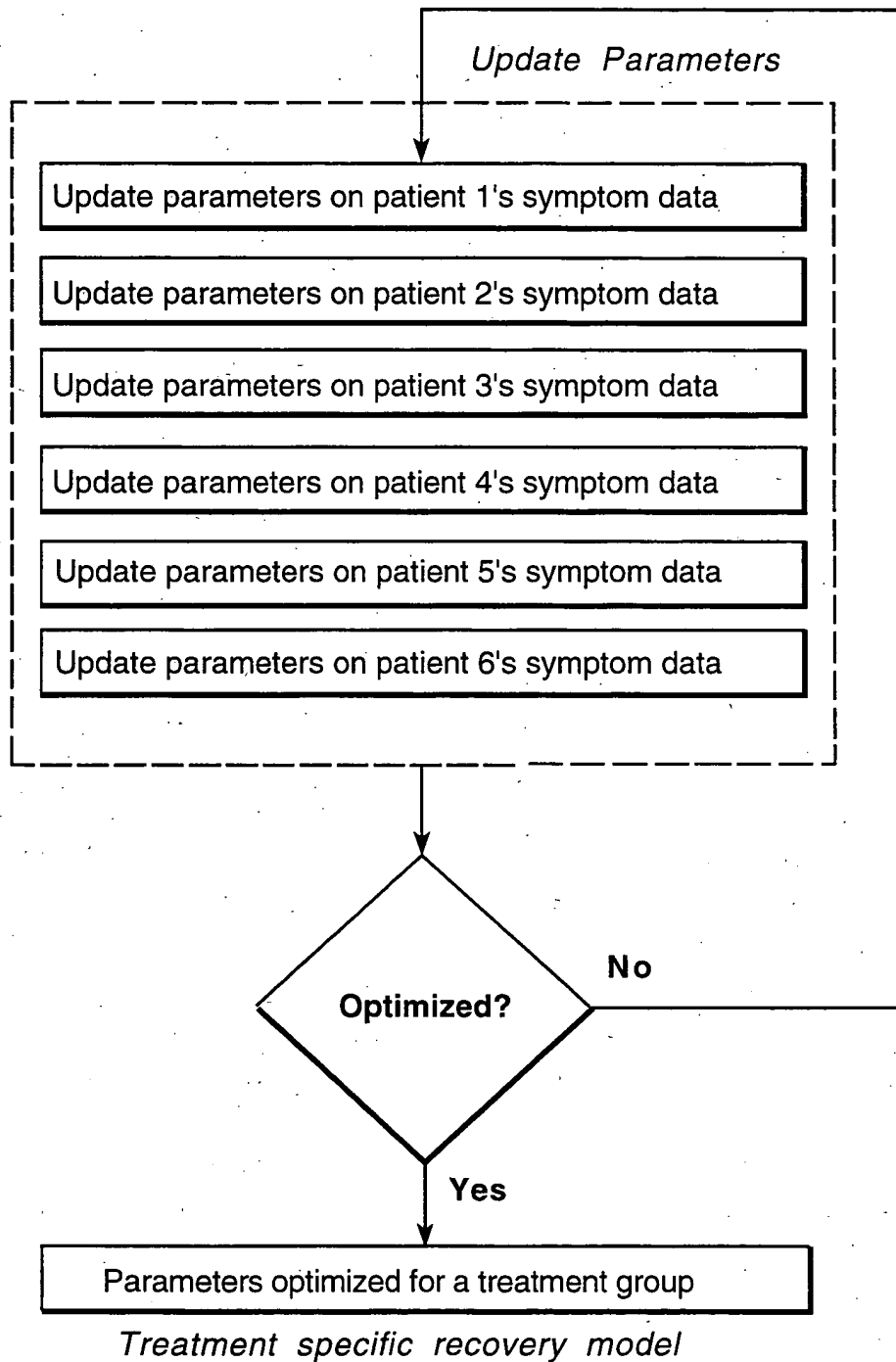


FIG. 3-3

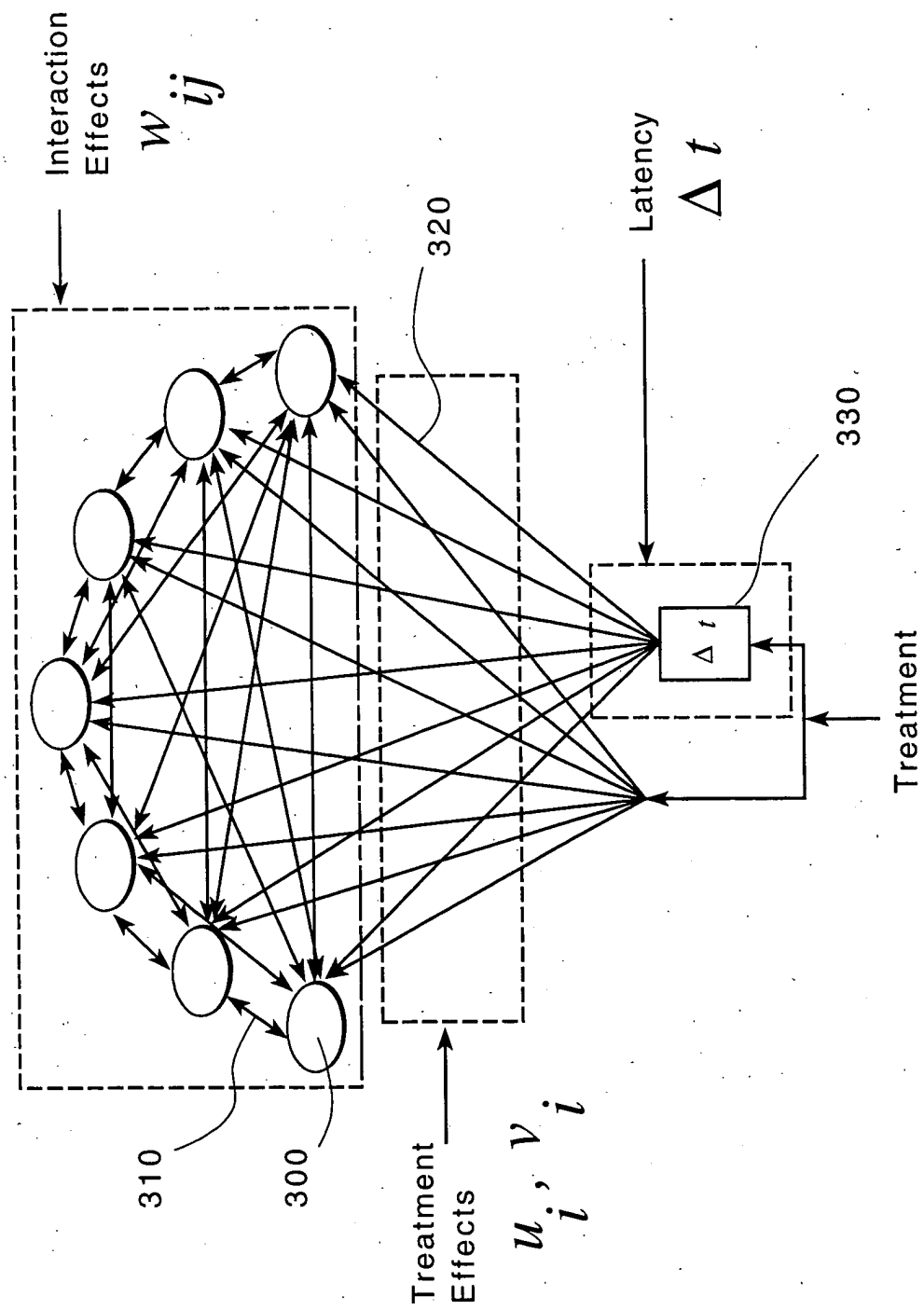


FIG. 3-4

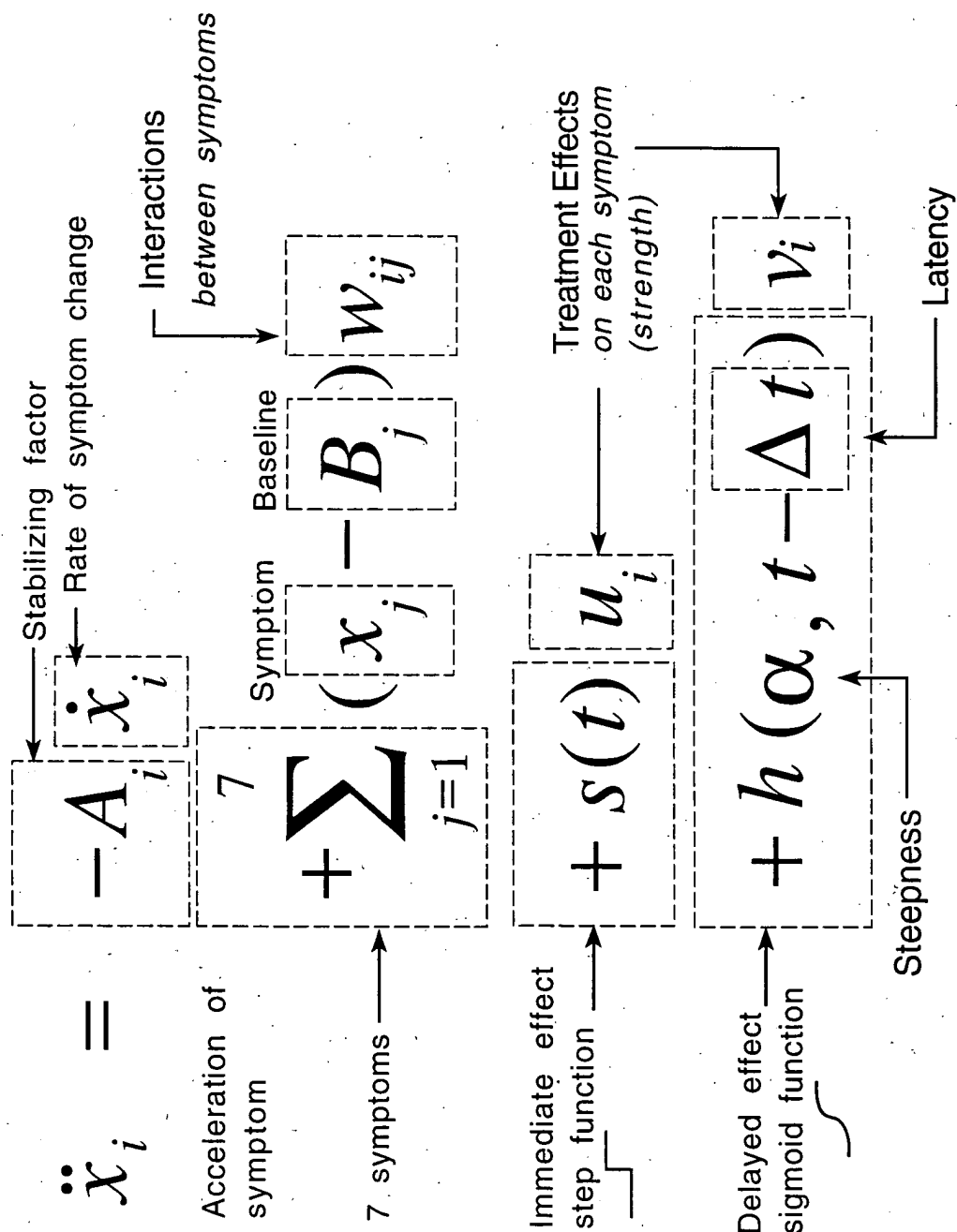


FIG. 3-5

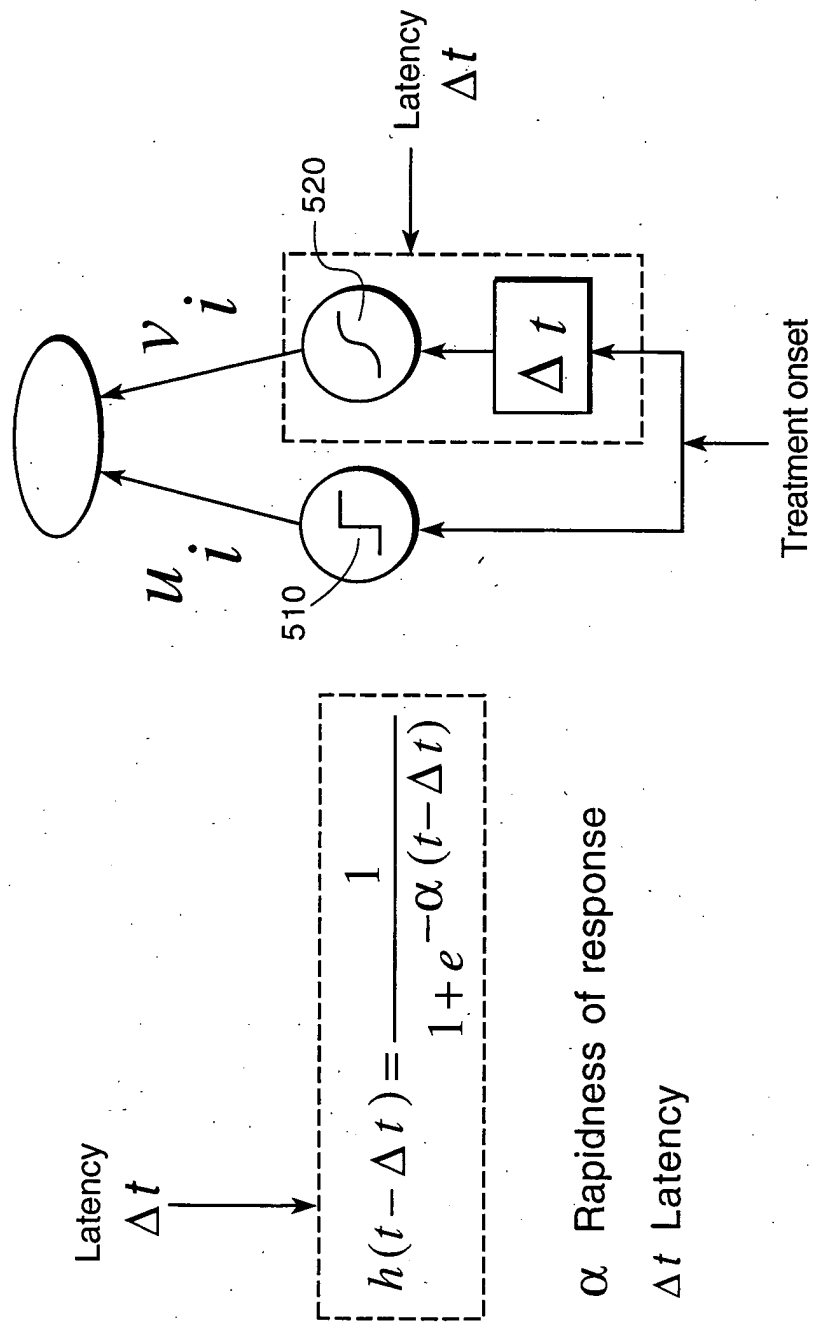


FIG. 3-6

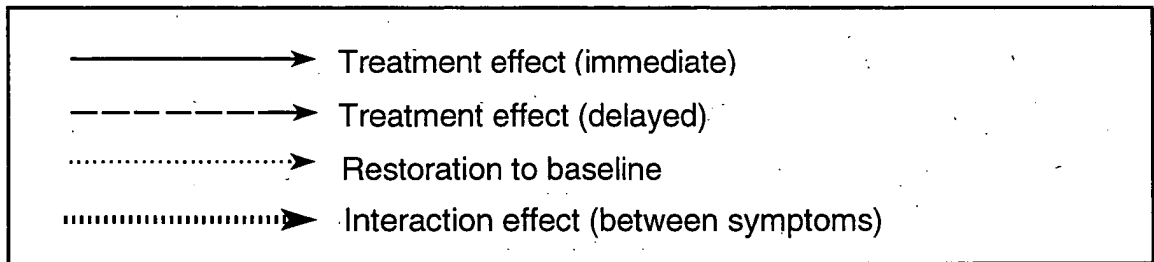
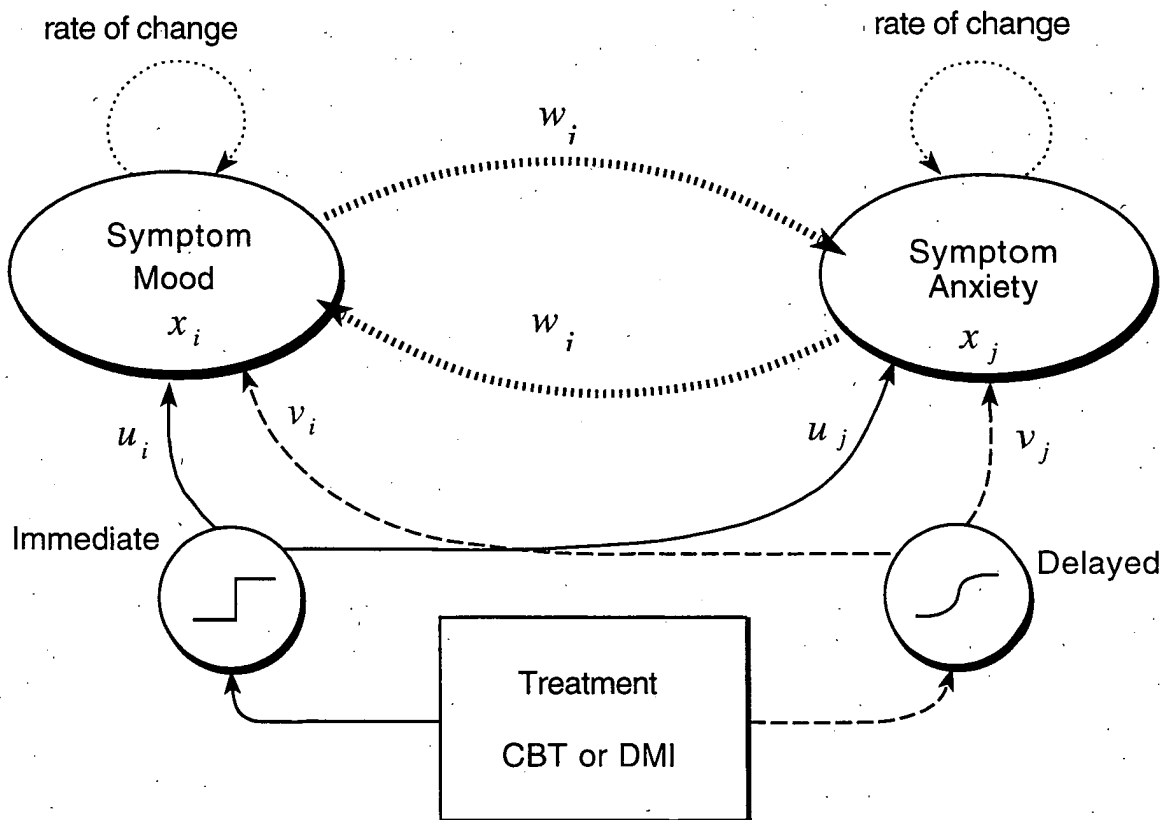


FIG. 3-7

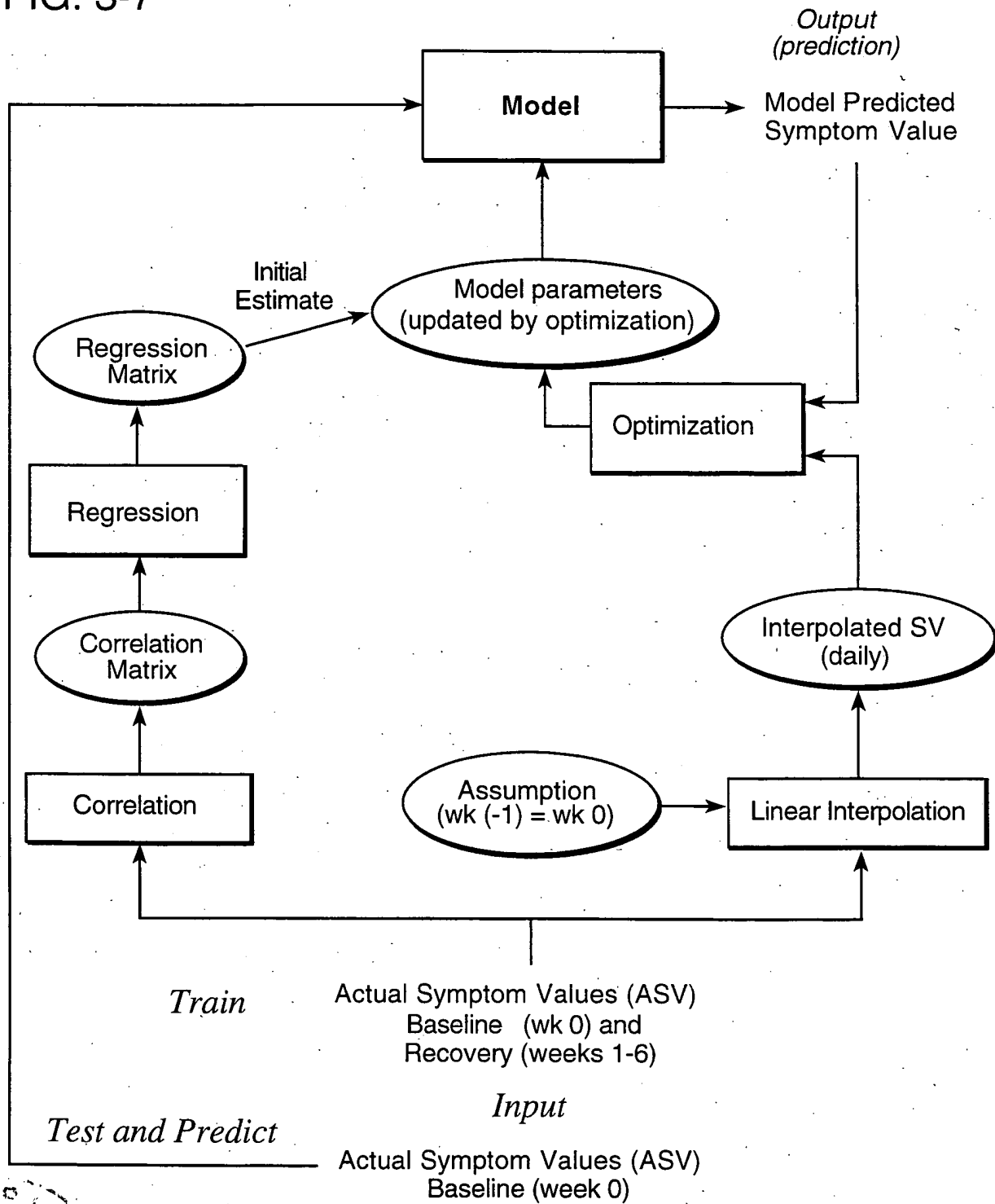


FIG. 3-8

$$L = \int_0^T \sum_{ik} \left\{ \left(X_{ik} - \hat{X}_{ik} \right)^2 + \mu_{ik} \left[\hat{X}_{ik} - f \left(\hat{X}_{ik} \right) \right] \right\} dt + K \sum_j P_j^2$$

810
820

actual
estimated

Obtain optimized parameters

- fit patient data
- train on entire recovery period
- minimize error term L
- gradient descent on parameters

L	=	Error term
k	=	patients
i	=	symptoms
j	=	parameter
x	=	data

FIG. 3-9A

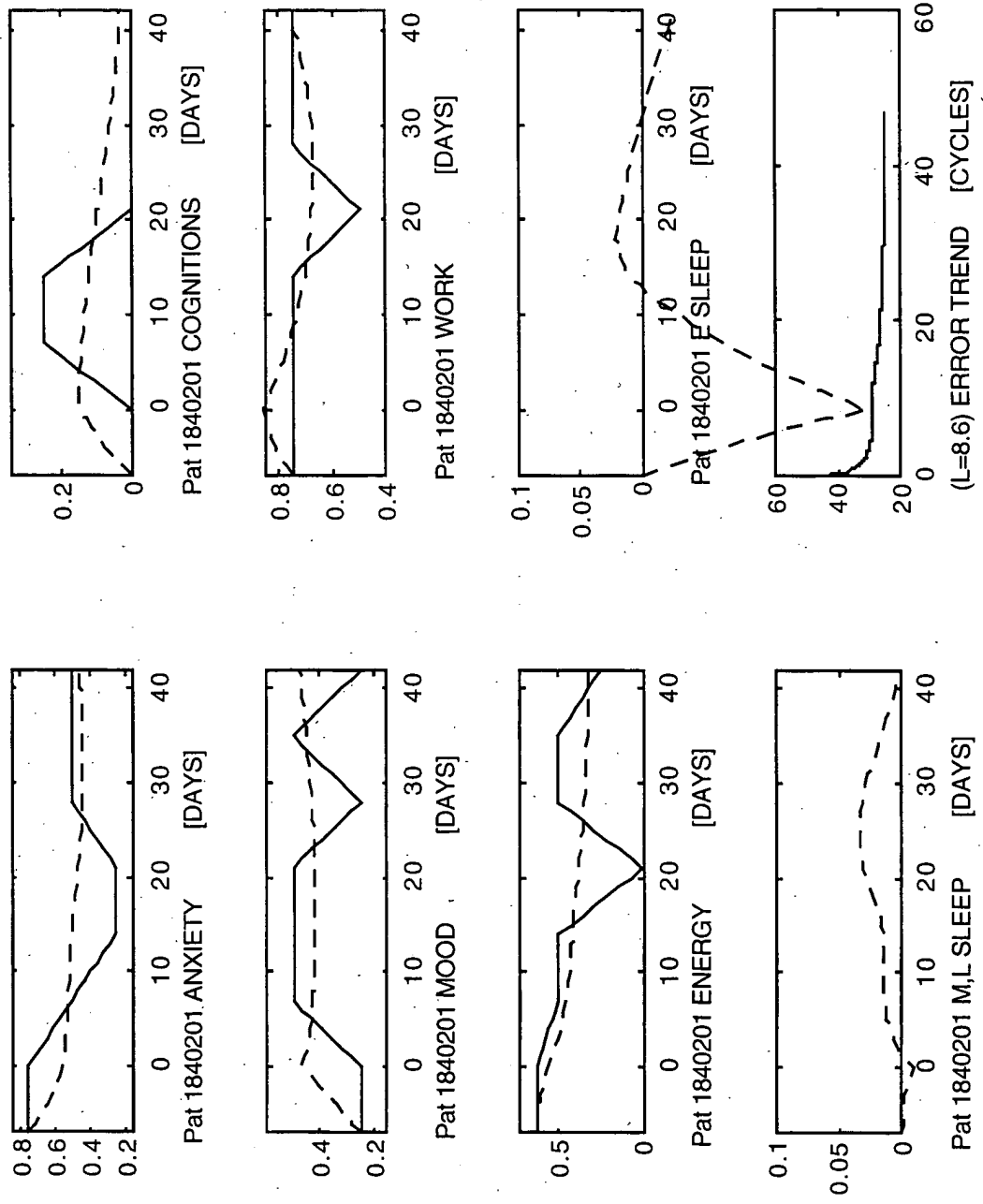


FIG. 3-9B

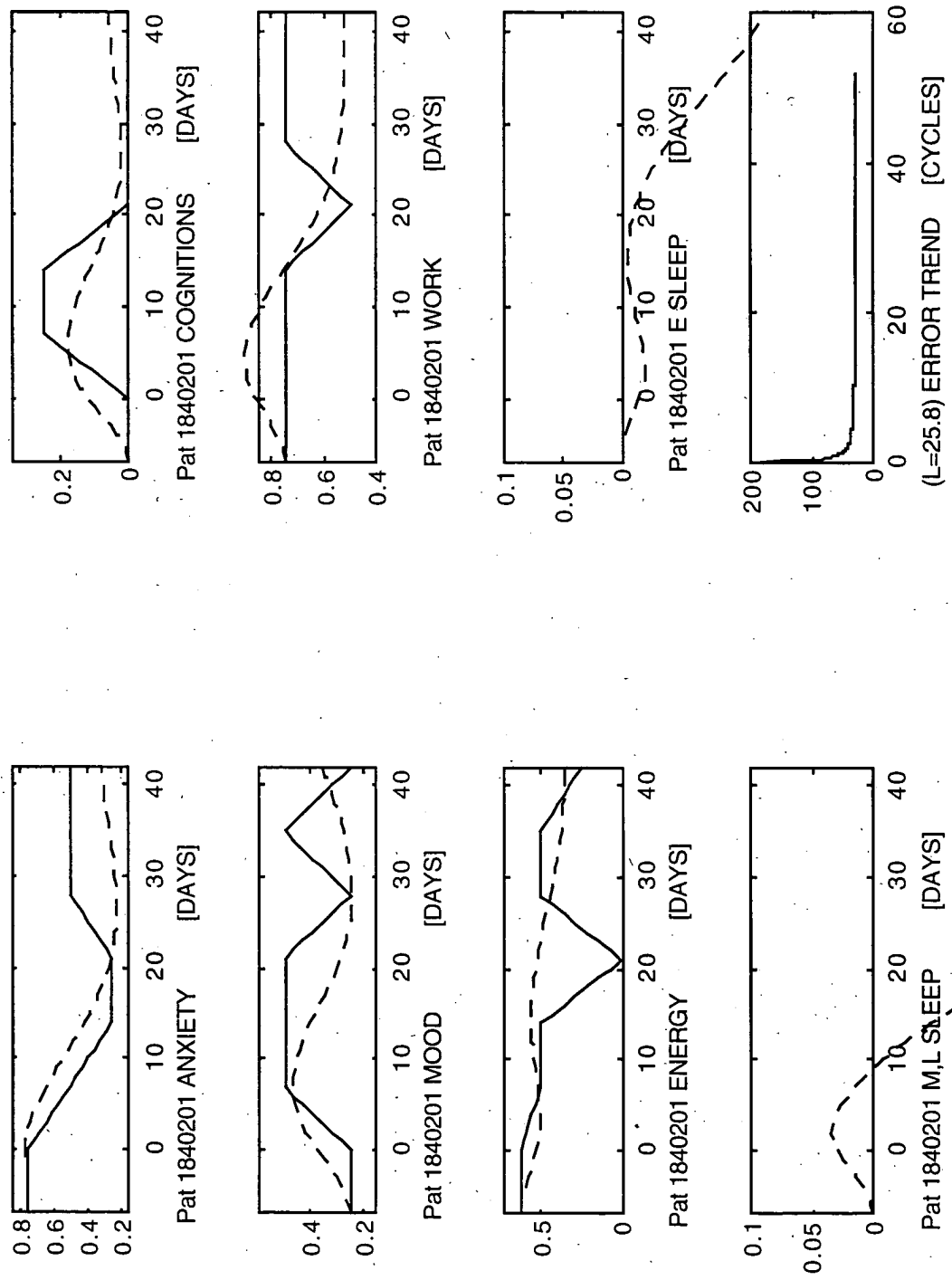


FIG. 3-10A

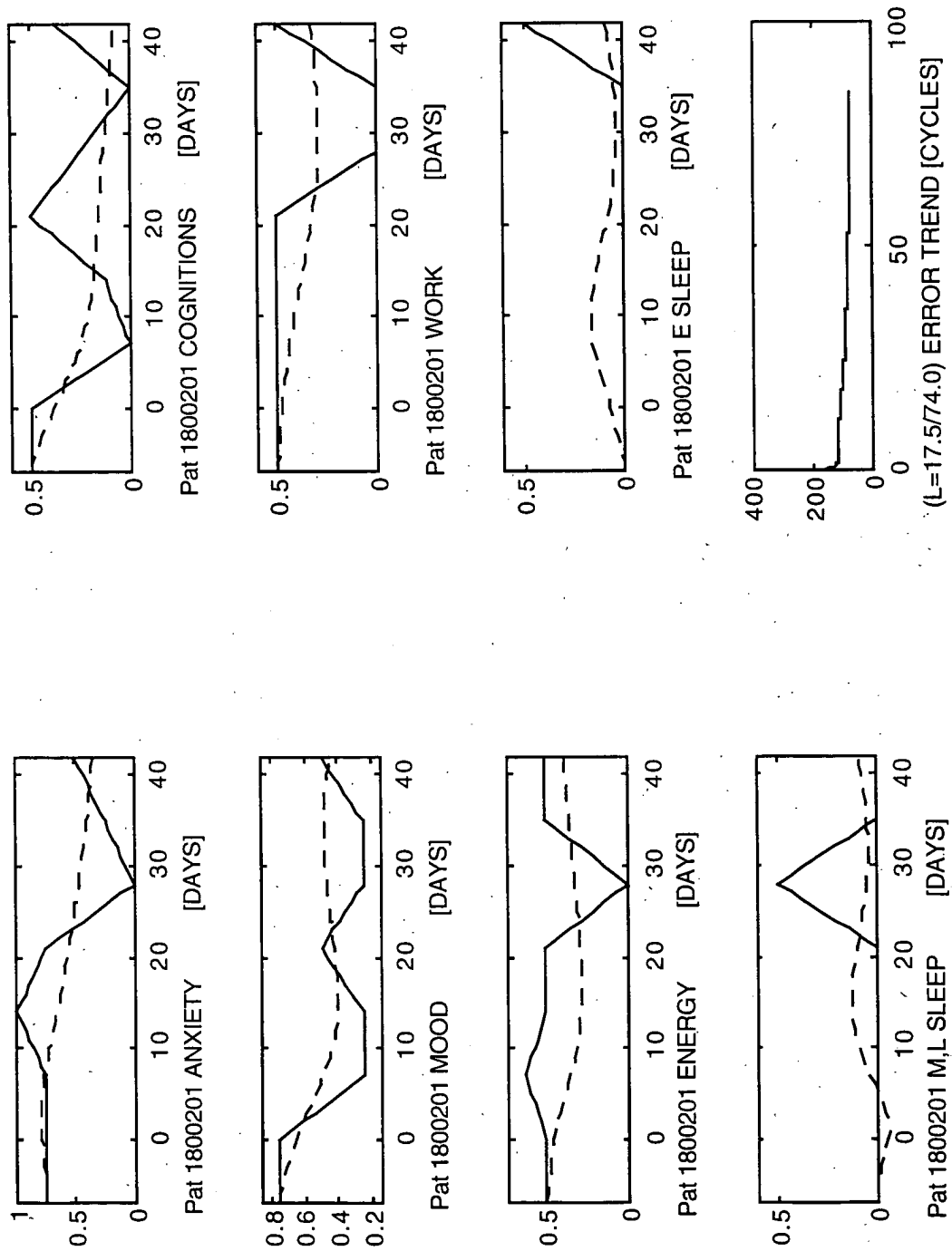


FIG. 3-10B

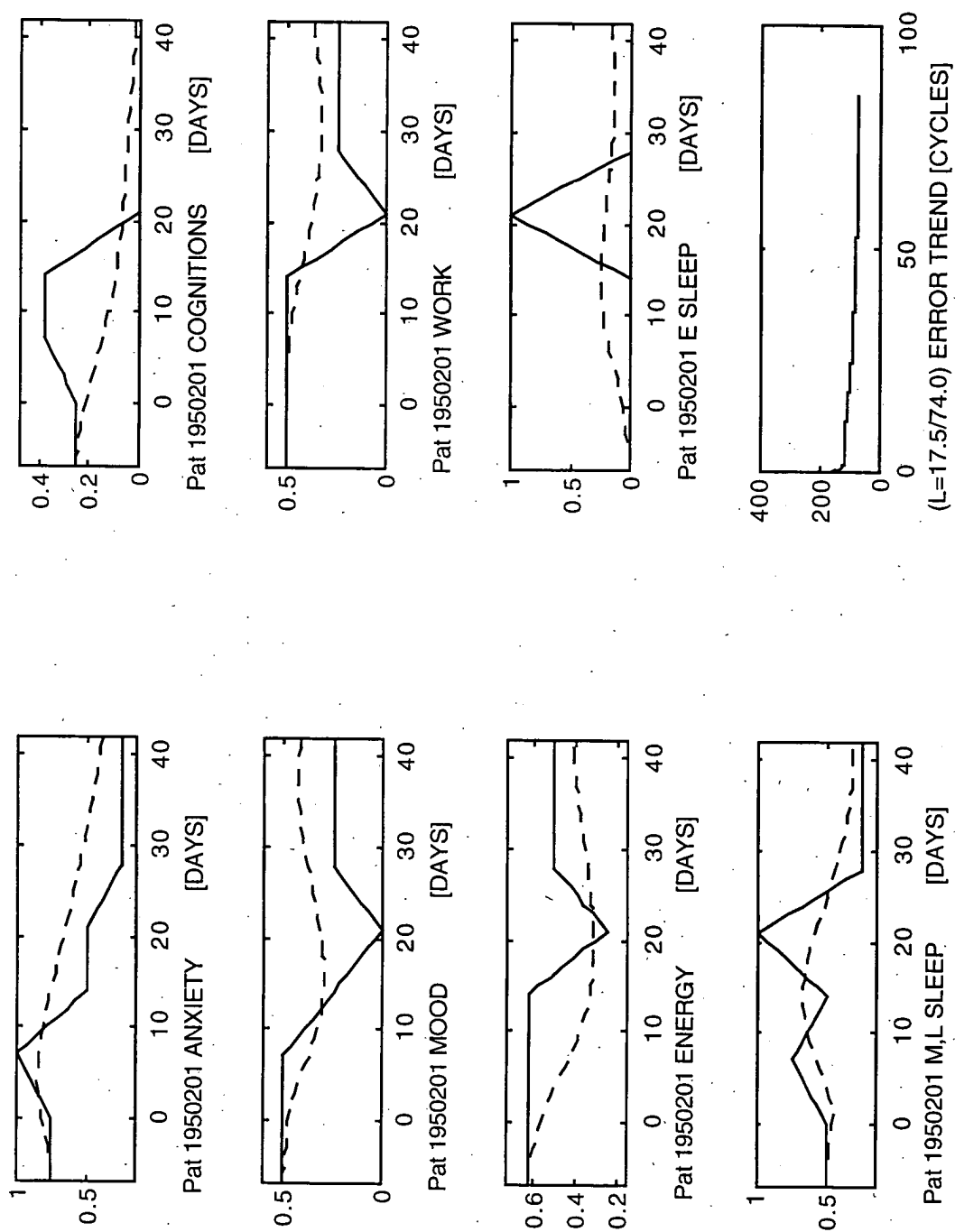


FIG. 3-10C

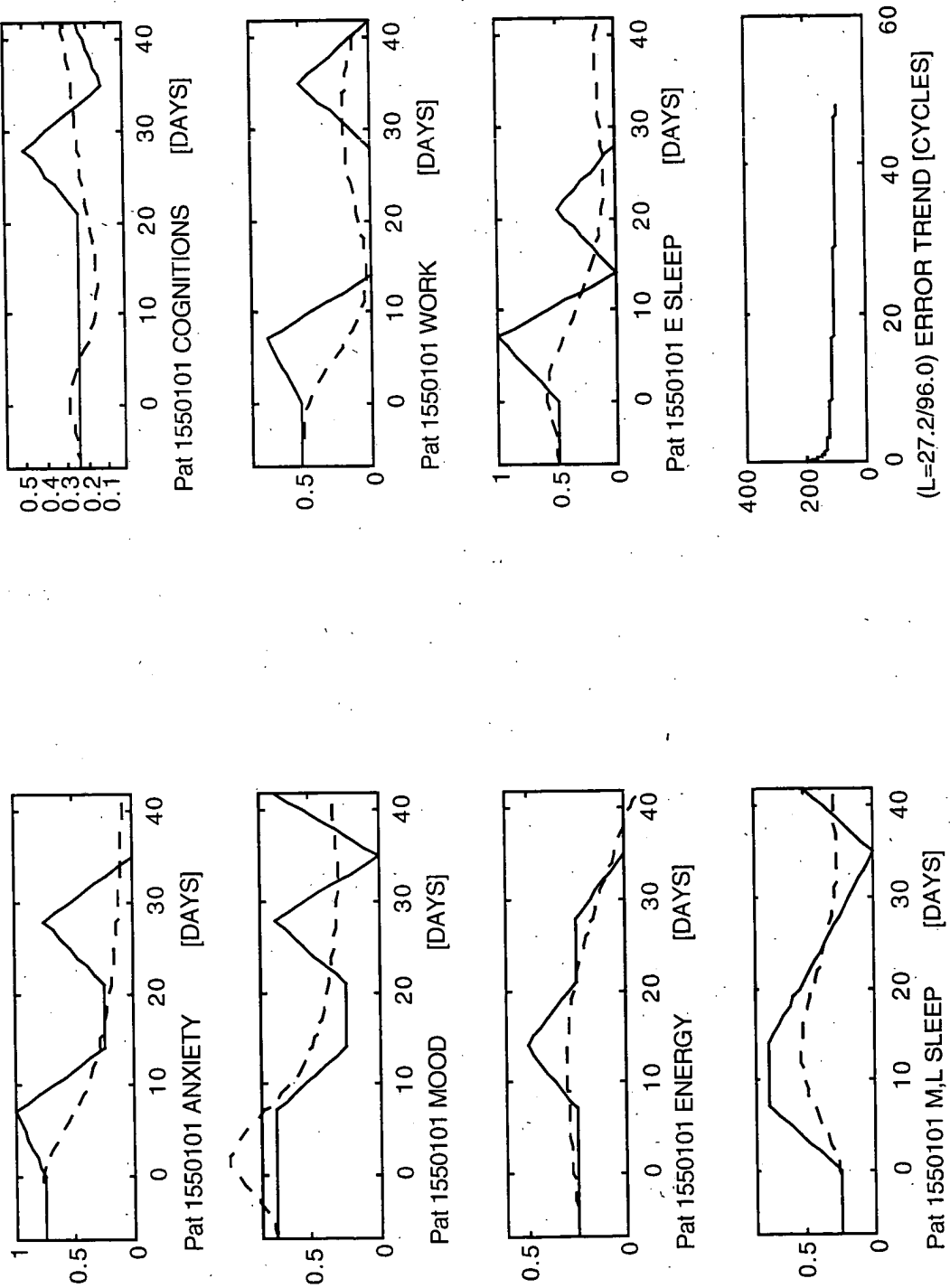


FIG. 3-10D

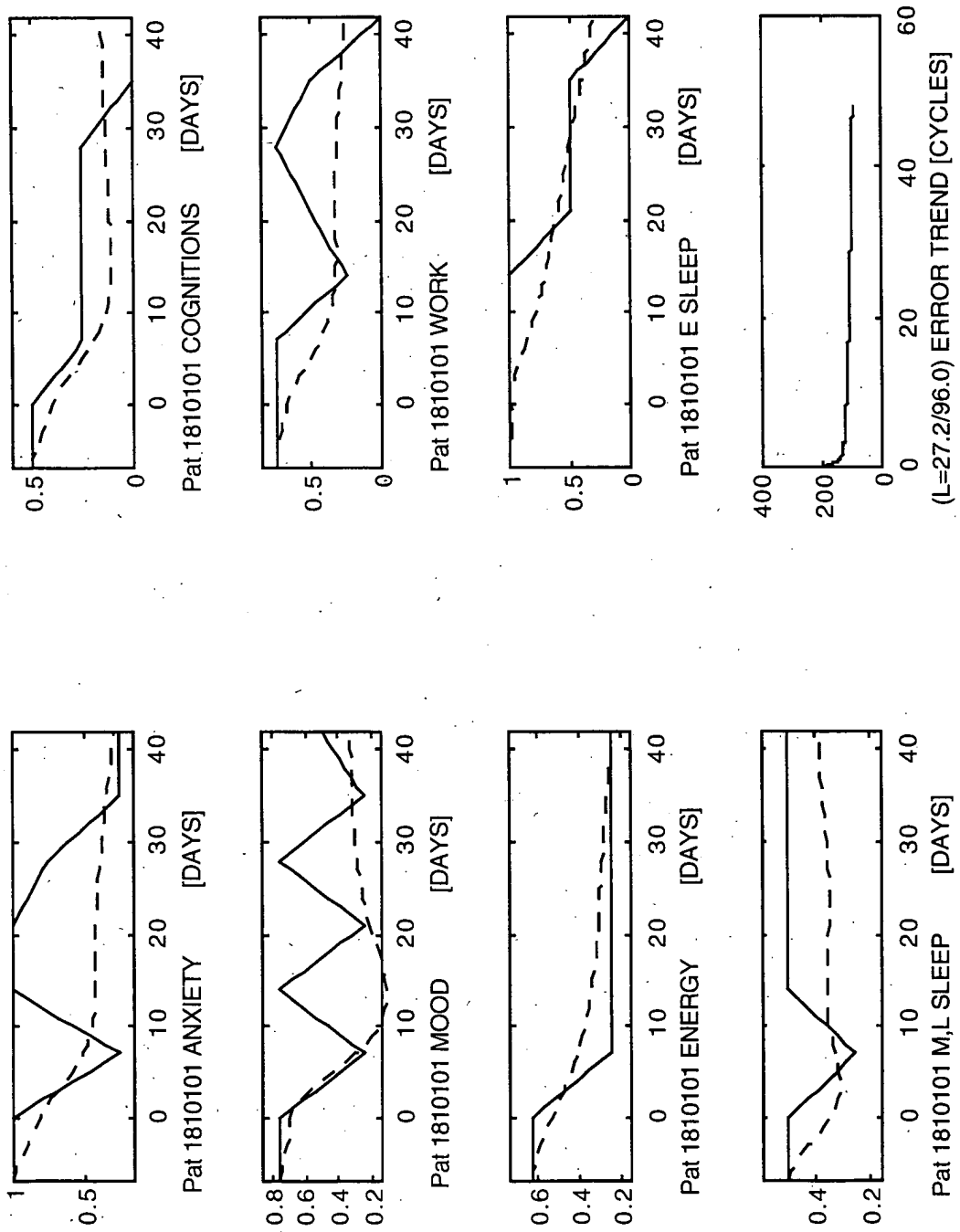


FIG. 3-11A

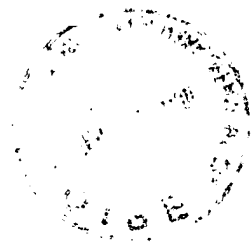
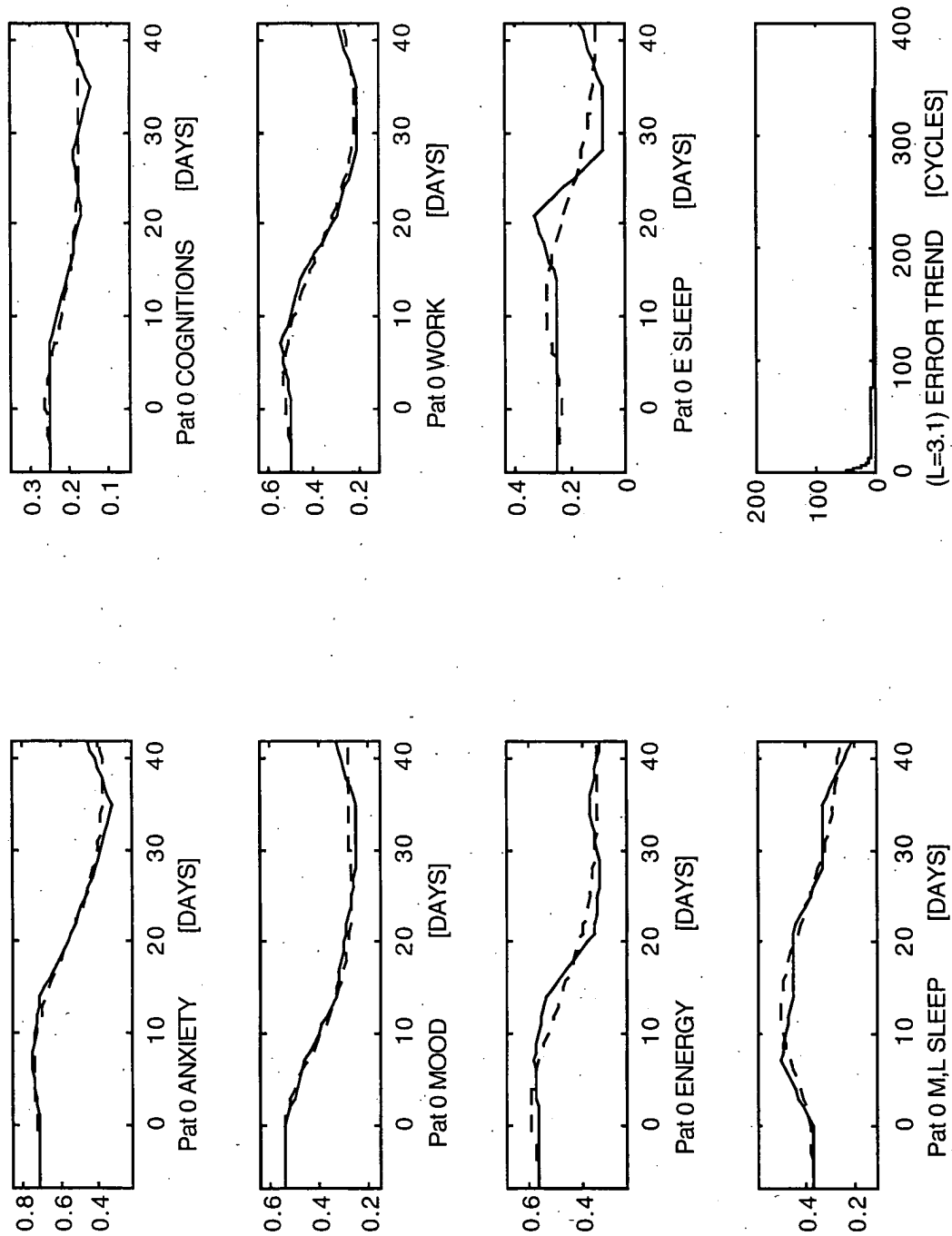


FIG. 3-11B

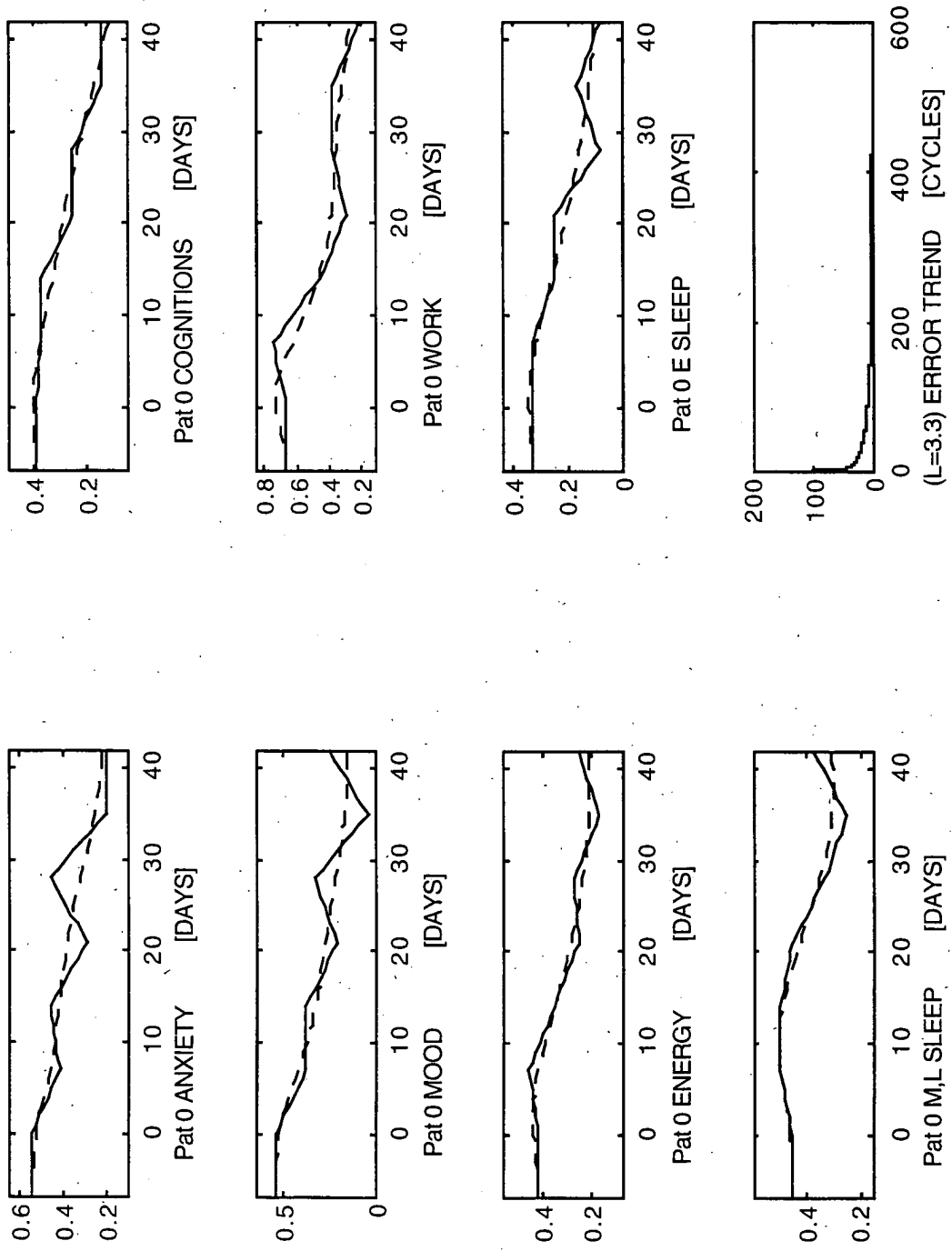


FIG. 3-12

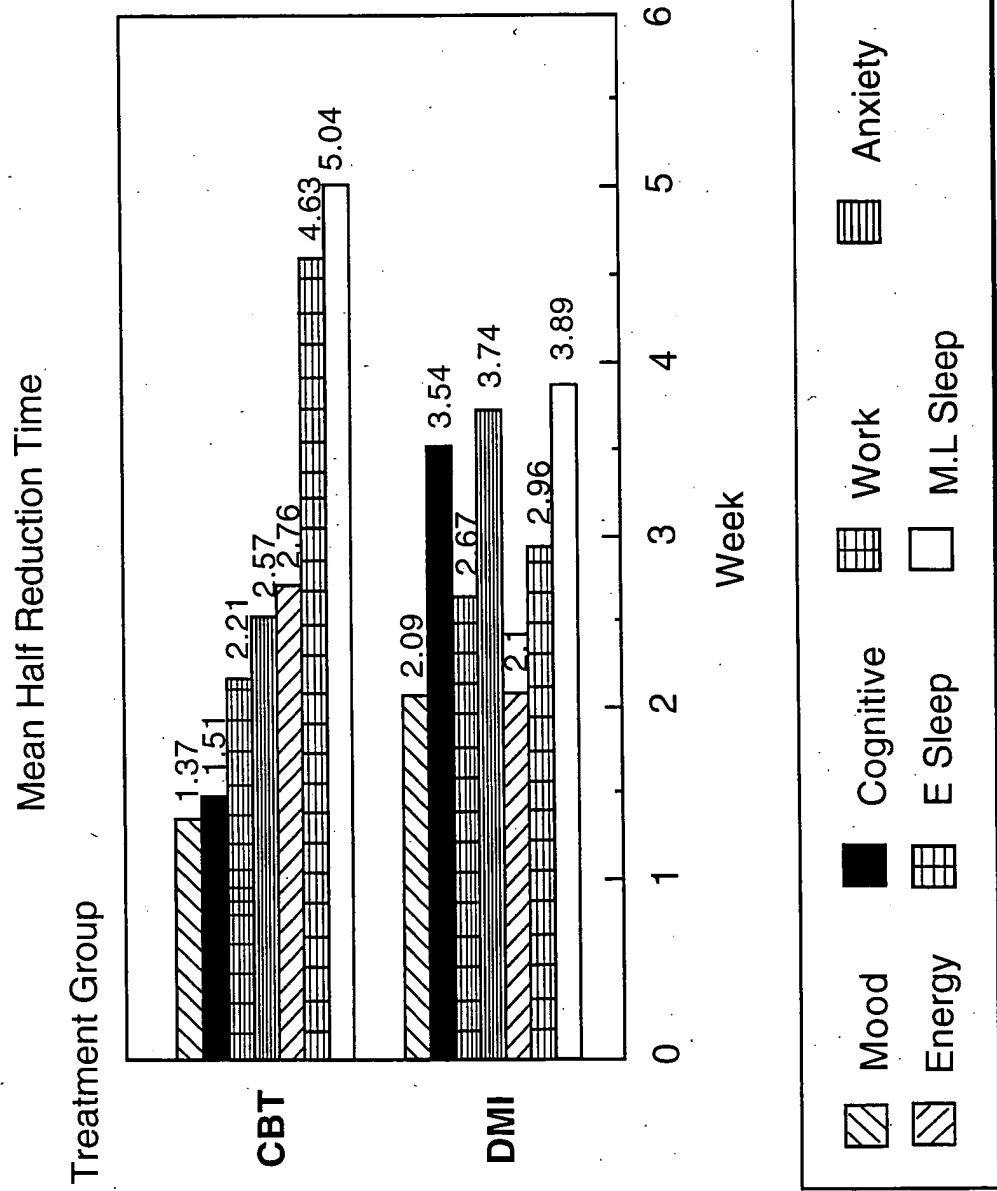


FIG. 3-13

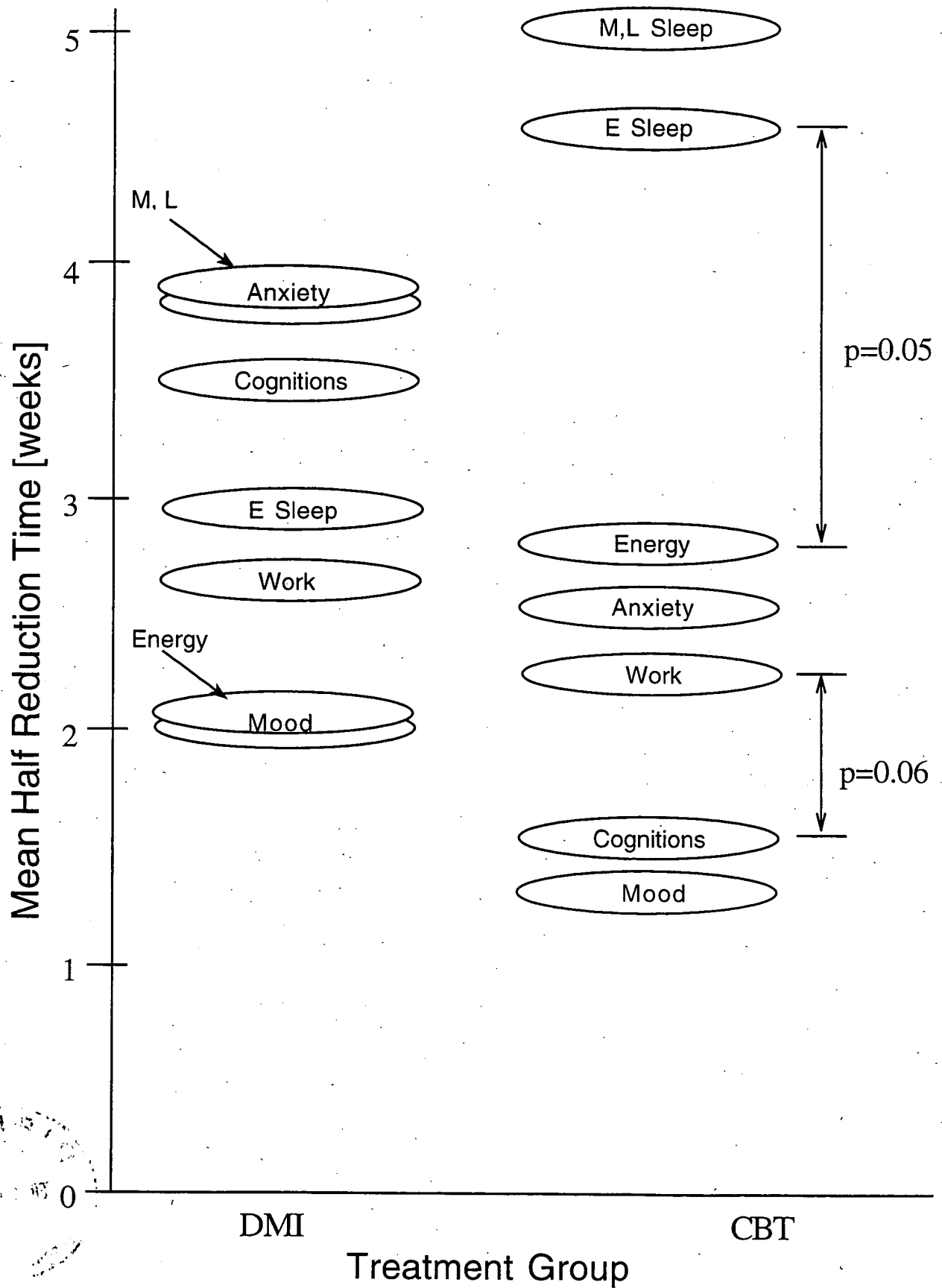
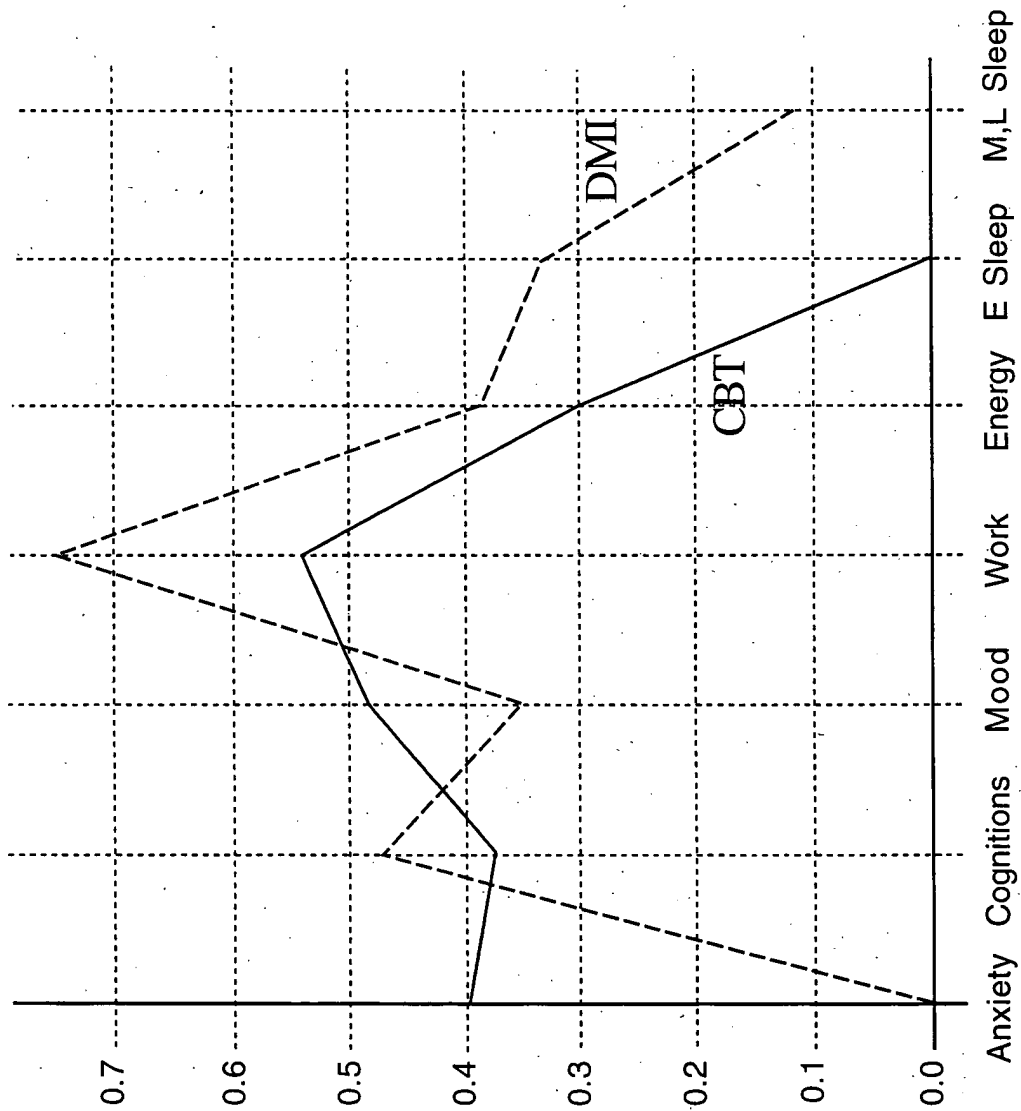
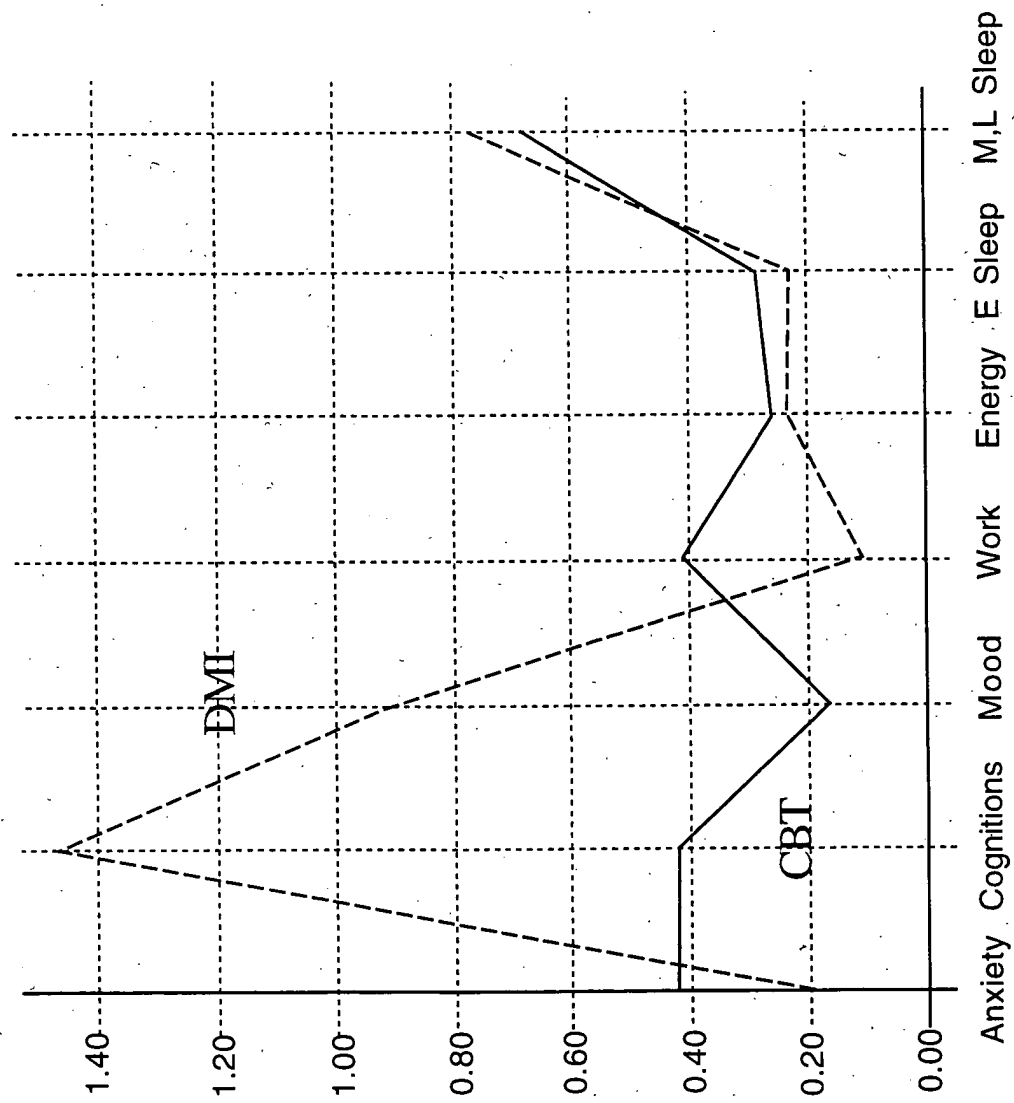


FIG. 3-14A



(a) Immediate Treatment Effects

FIG. 3-14B



(b) Delayed Treatment Effects



FIG. 3-15

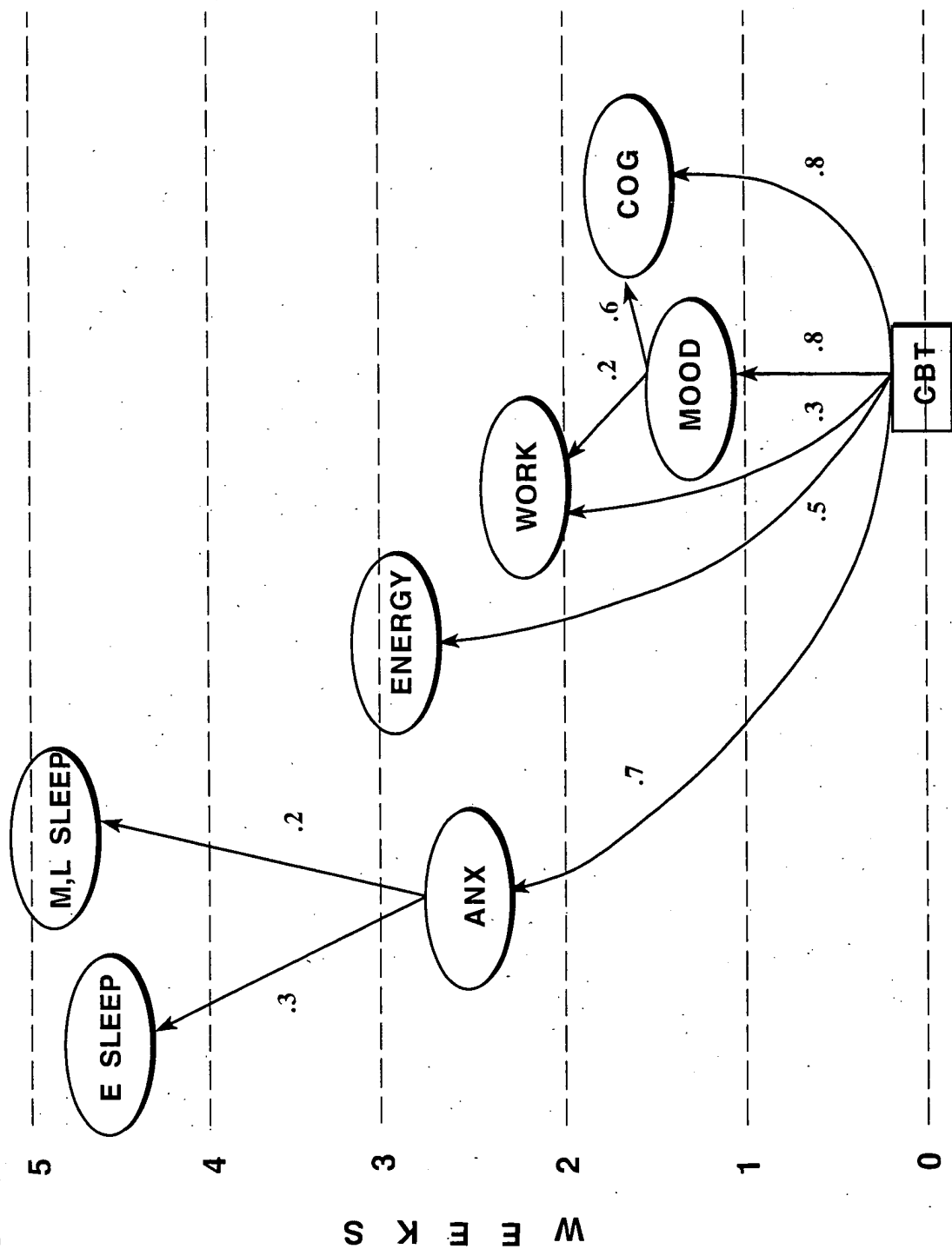


FIG. 3-16

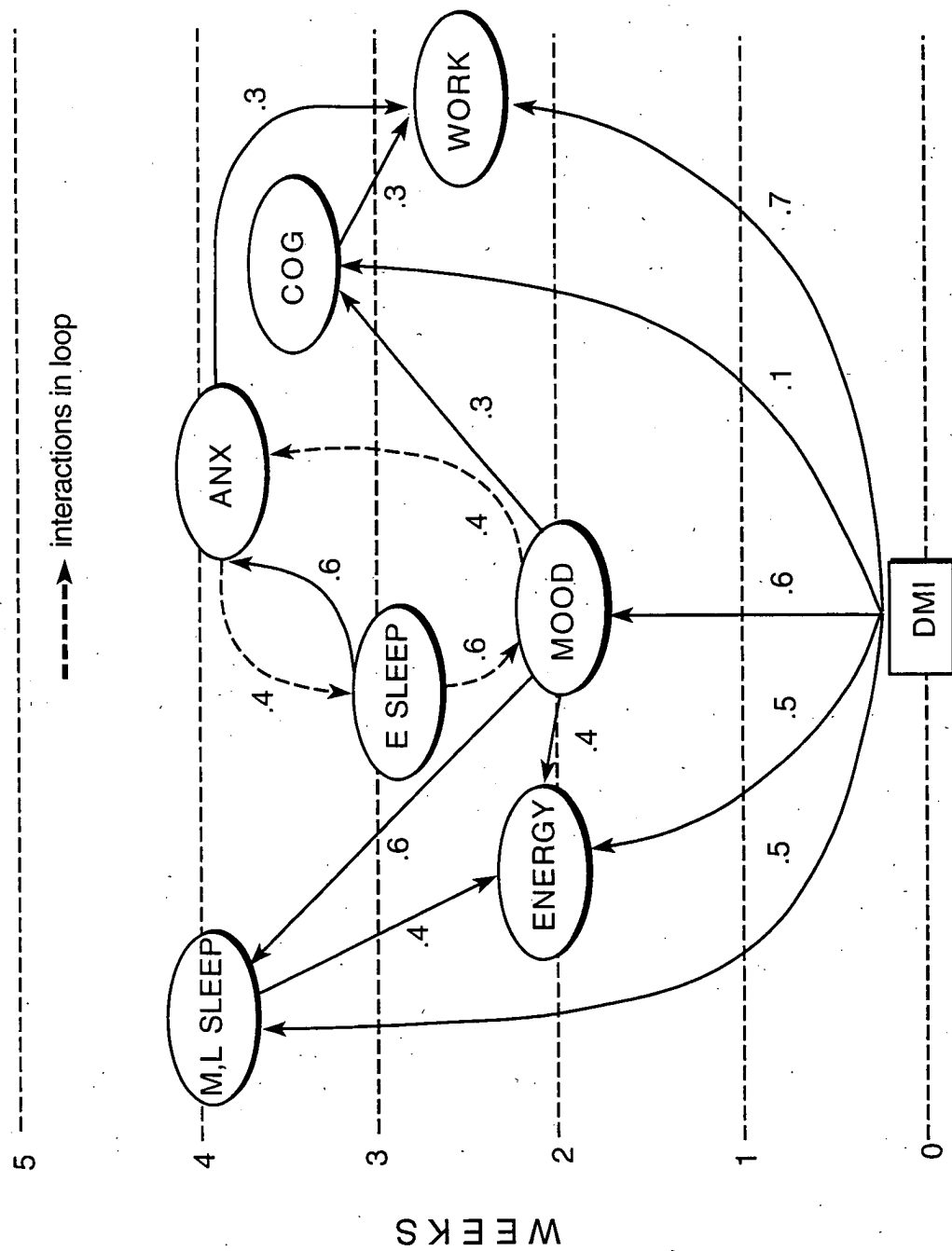


FIG. 3-17

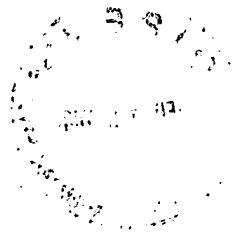
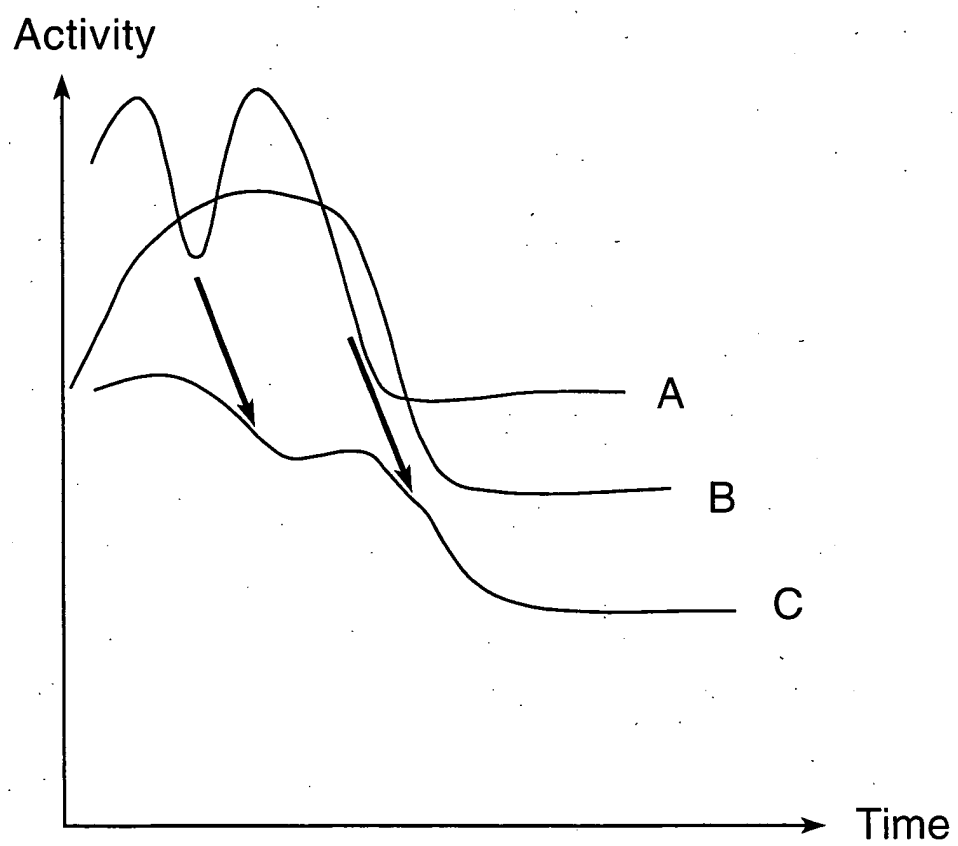


FIG. 4-1

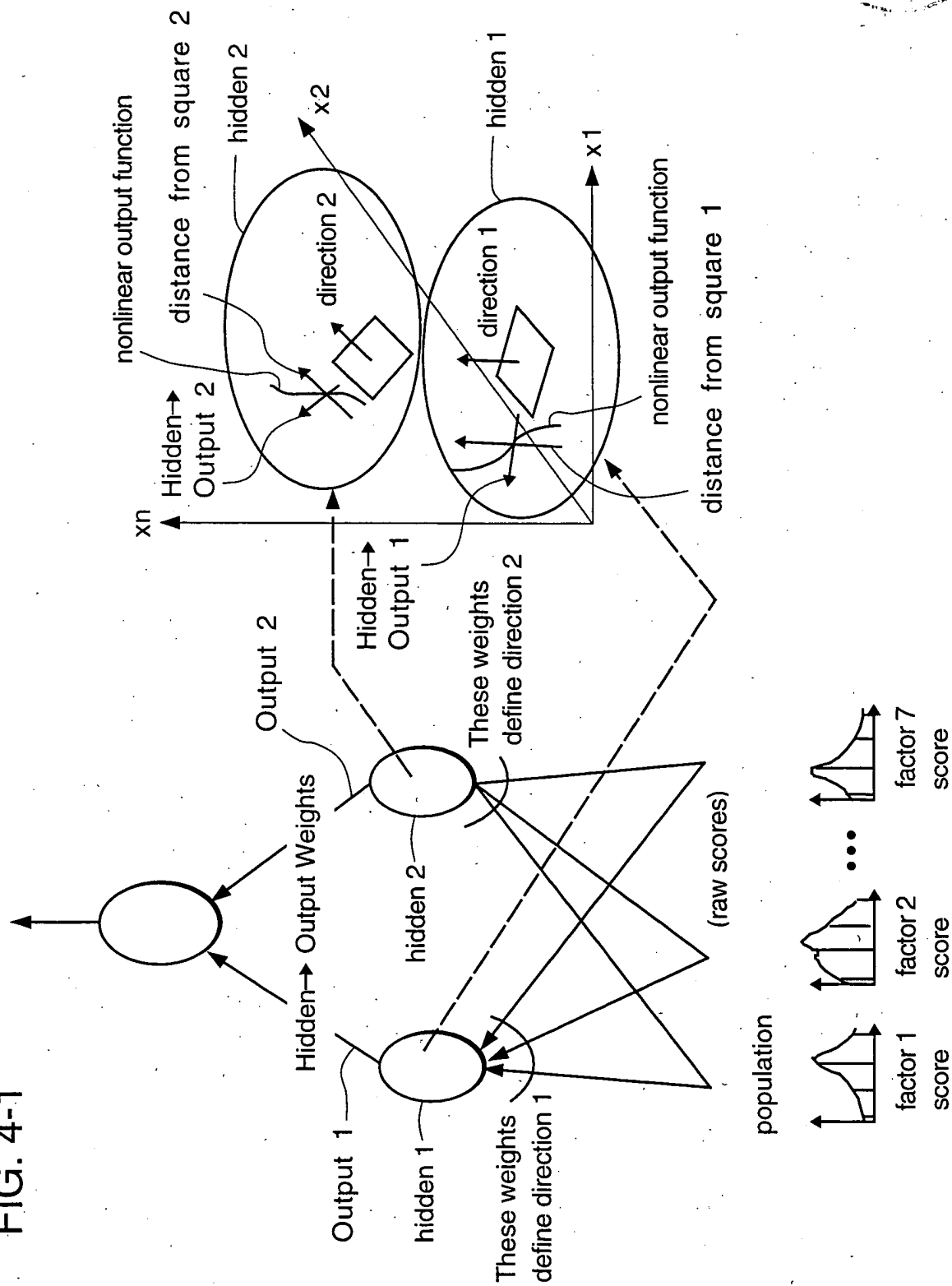


FIG. 4-2

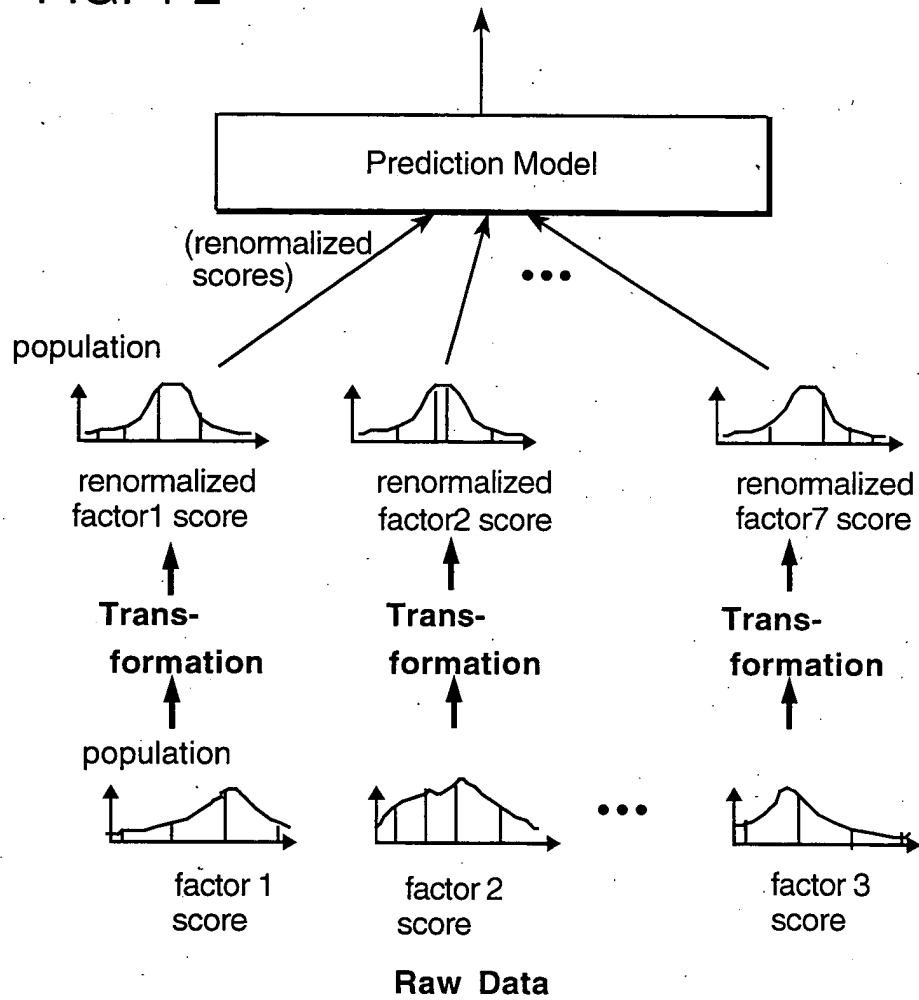


FIGURE 1A

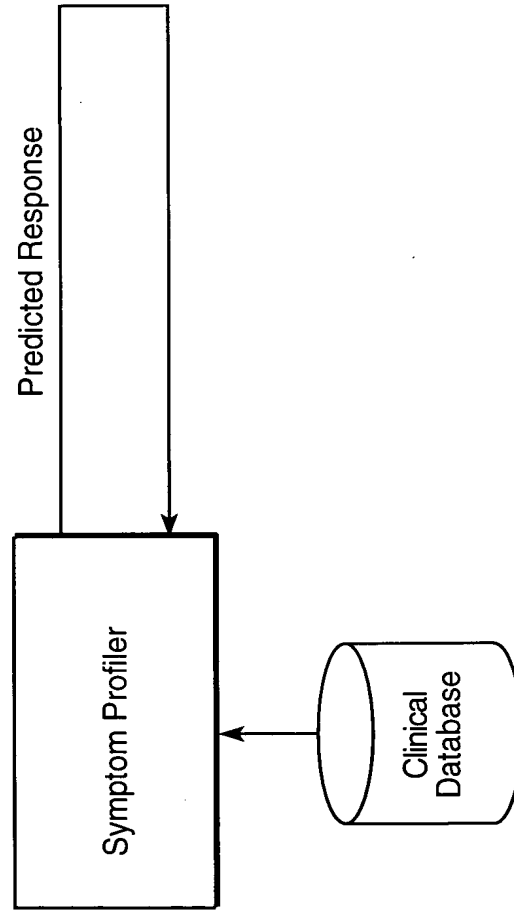


FIGURE 1B

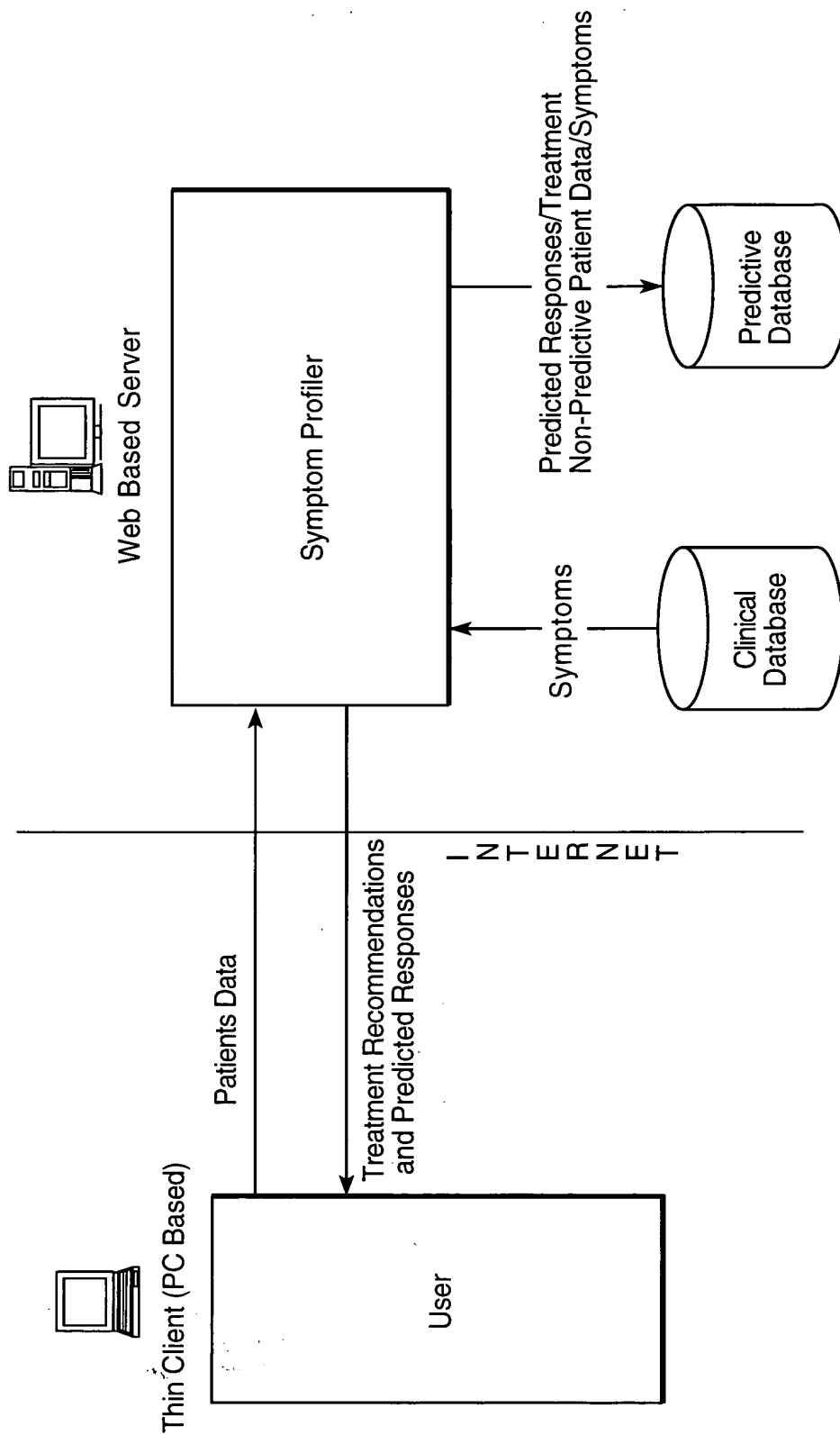


Table 4.1

Prediction of Outcome from Baseline Symptoms														
Symptom	Treatment													
HDRS Item	Other	Tricyclic							MAOI		SSRI	Psychotherapy		ECT
		Ami	Nor	IMI	DMI	Clo	Lev	Map	Phe	Tran	Flu	IPT	CBT	ECT
Severity	5,9-	10-		10-, 11, 16+, 17+	1,8	8,13	3-	3-, 6+	17+		1	16+	7	14-
Depressed Mood	2	10-, 15	4	10-, 11	1,8	8			4	18+	1			14-
Feelings of Guilt		15		11	1,8	8				18	1			14
Suicide	5	15		11	1,8	8				18	1			14
Insomnia: early	2	15	4	11	1,8	8			12,4	18	1			14
Insomnia: middle	2	15-	4	11	1,8	8			12,4	18-	1			14
Insomnia: late	2	15	4	11, 12+	1,8	8			4	18-	1			14
Work and Interests		15	4	11, 12	1,8	8			11	18	1			14-
Retardation	2	10, 15	4	10, 11, 12+	1,8	8			4	18+	1			18
Agitation	2	10, 15		10, 11, 12	1,8	8			12,4	18	1			14-
Anxiety : somatic	2	10, 15	4	10, 11	1,8	8			4	18	1			
Anxiety : psychic	2	10, 15	4	10, 11	1,8	8			4	18	1			
Somatic: gastrointestinal		15-		11	1,8	8				18	1			14-
Somatic: general		10, 15	4	10, 11	1,8	8			4	18	1			
Genital symptoms		15		11, 12	1,8	8			11	18	1			14
Hypochondriasis		15-	4	11	1,8	8			4	18	1			14
Loss of Weight (or change)	2	15	4	11, 12	1,8	8			12,4	18+	1			14
Insight		15+		11	1,8	8				18	1			
Diurnal variation		15	4	11, 12	1,8	8			12,16	18	1			14
Depersonalization and derealization		15		11	1,8	8				18	1			
Paranoid symptoms	2	15		11	1,8	8				18	1			
Obsessive and compulsive	2	15		11	1,8	8				18	1			

Table 4.2

1. Bowden, C., Schatzberg, A., Rosenbaum, A., Contreras, S., Samson, J., & Dessain, E. (1993). Fluoxetine and desipramine in major depressive disorder. *Journal of Clinical Psychopharmacology*, 13, 305-311.
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FIGURE 1C

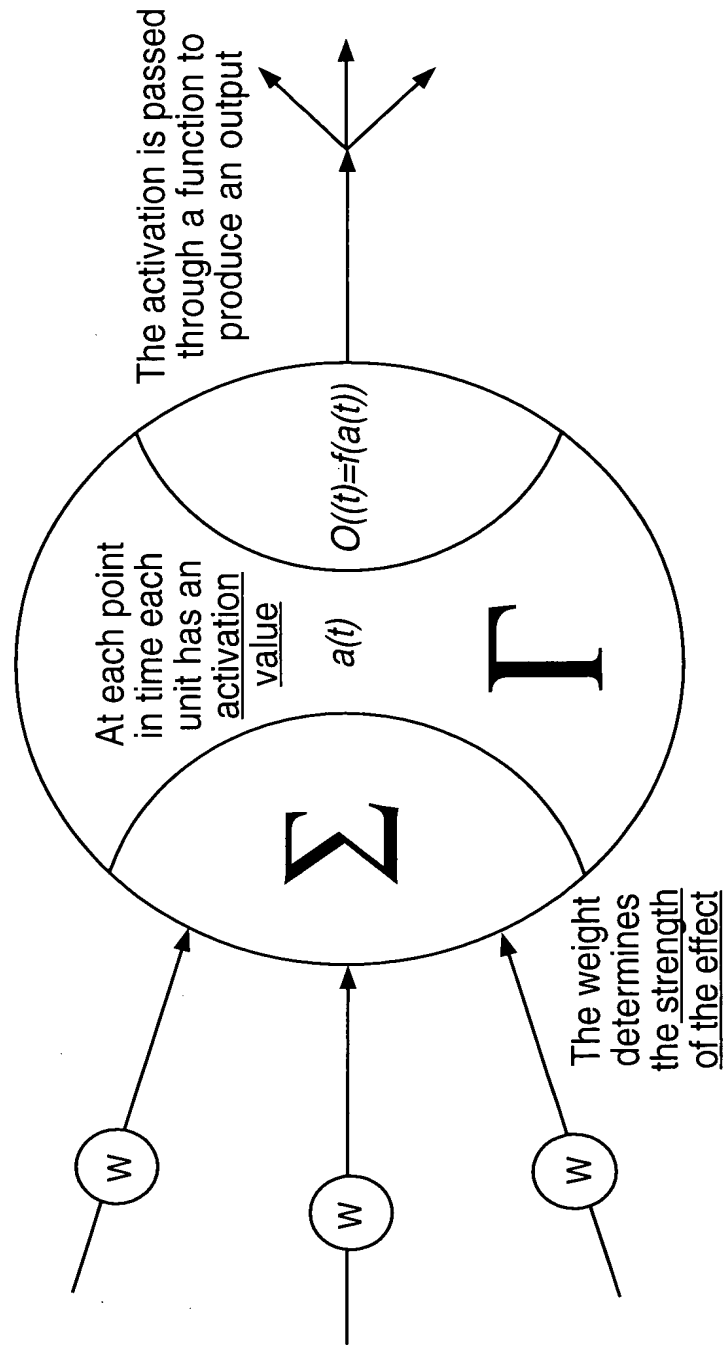


FIGURE 2

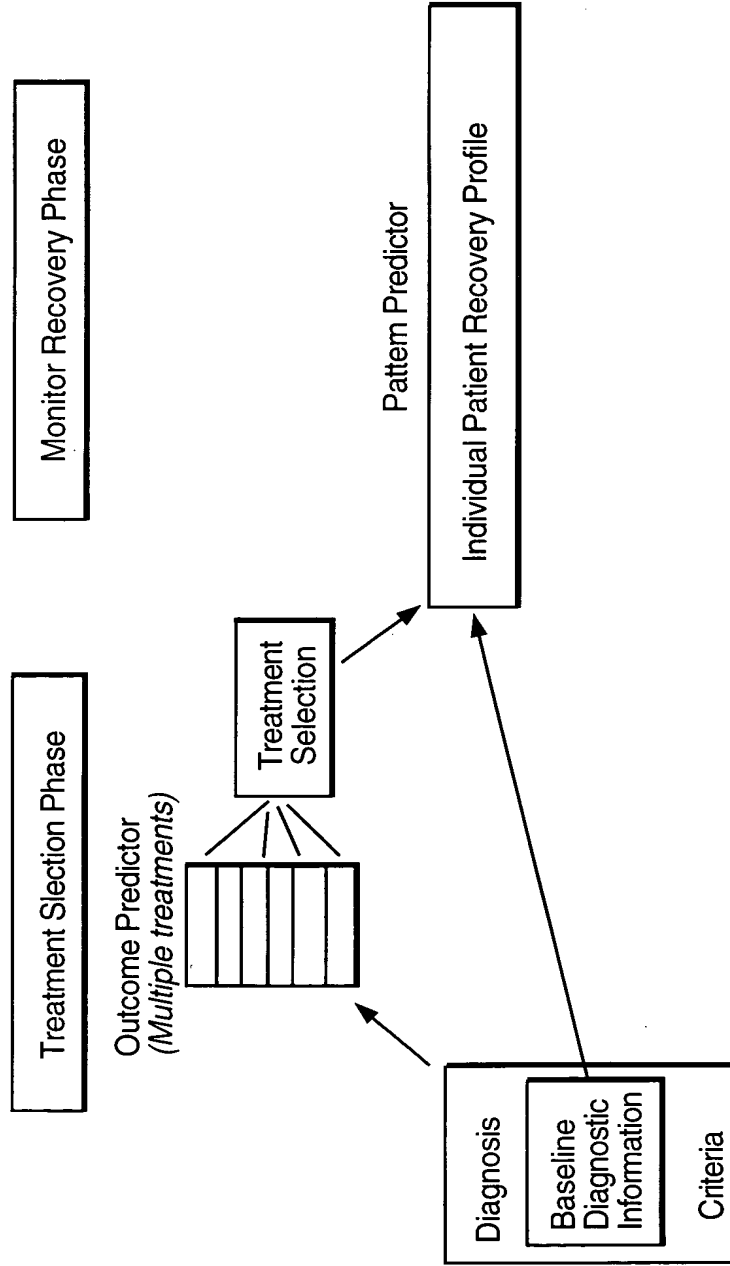


FIG. 3-2

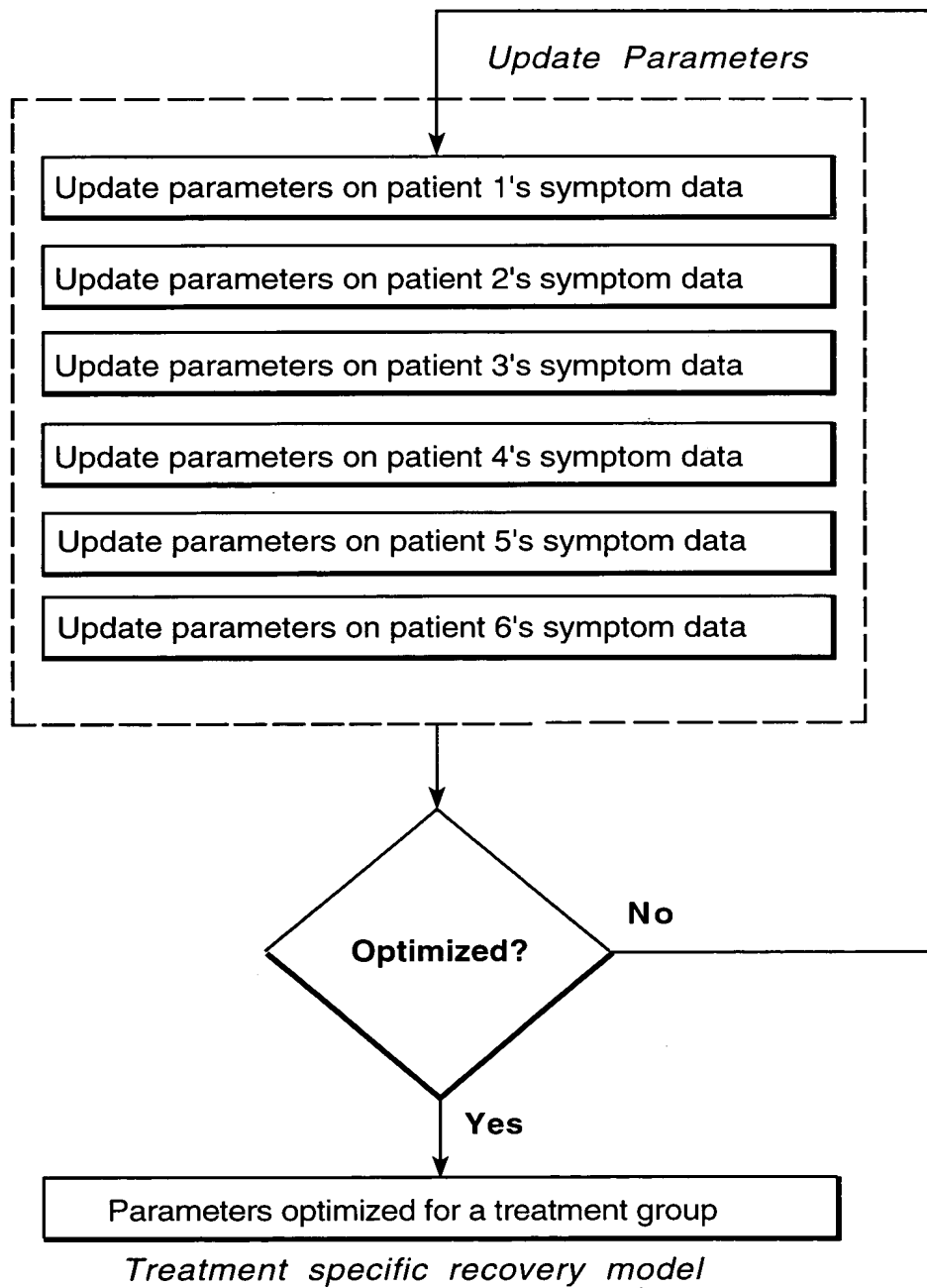


FIG. 3-3

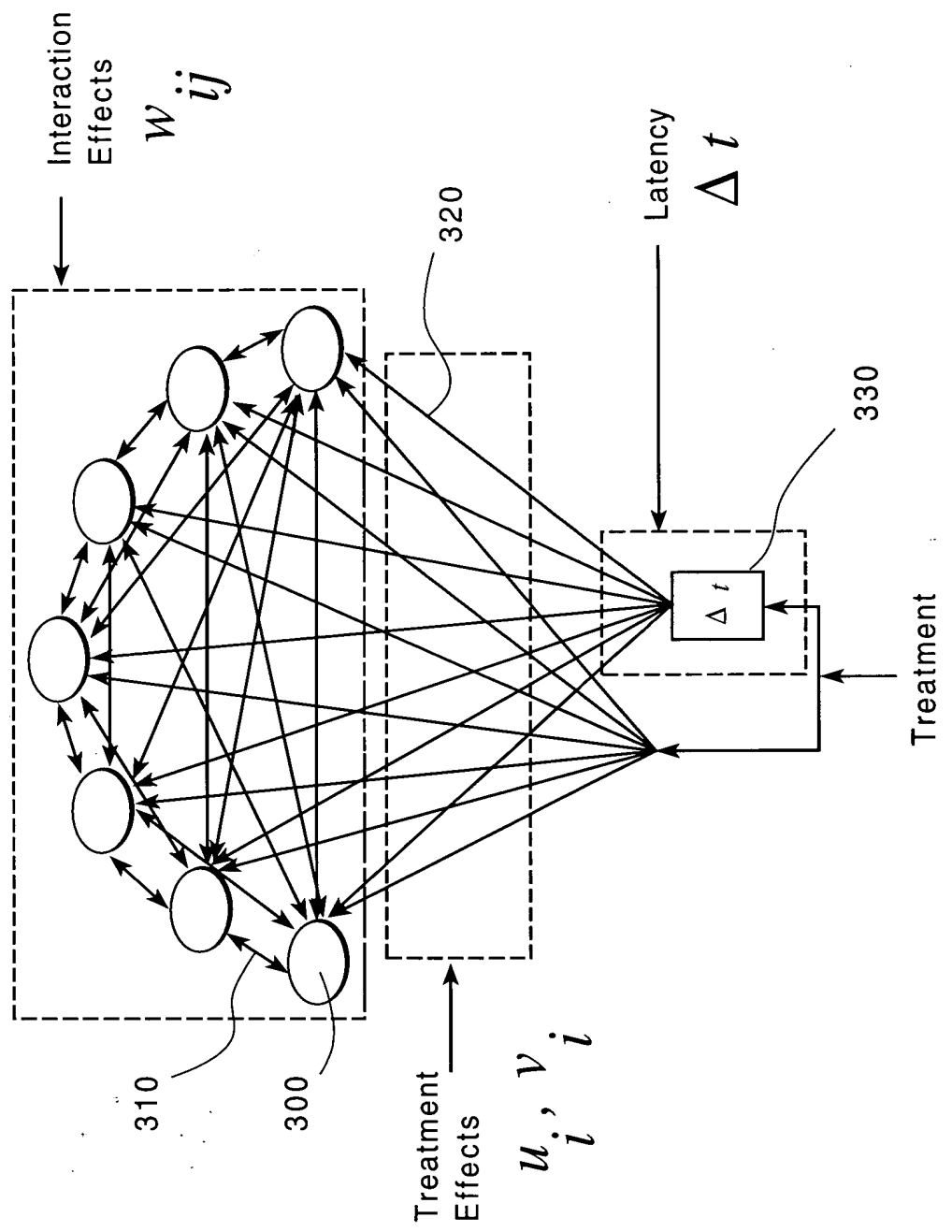


FIG. 3-4

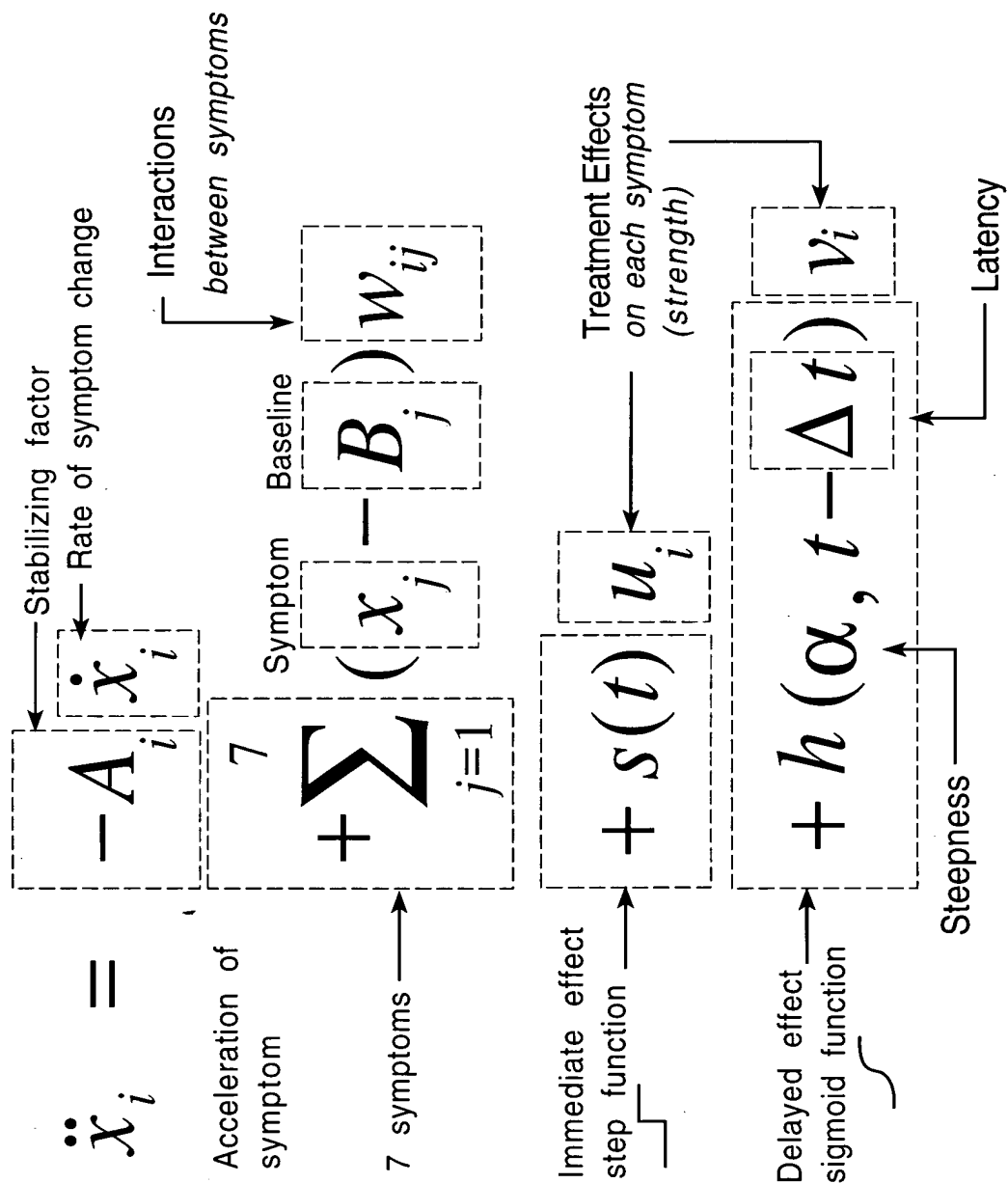


FIG. 3-5

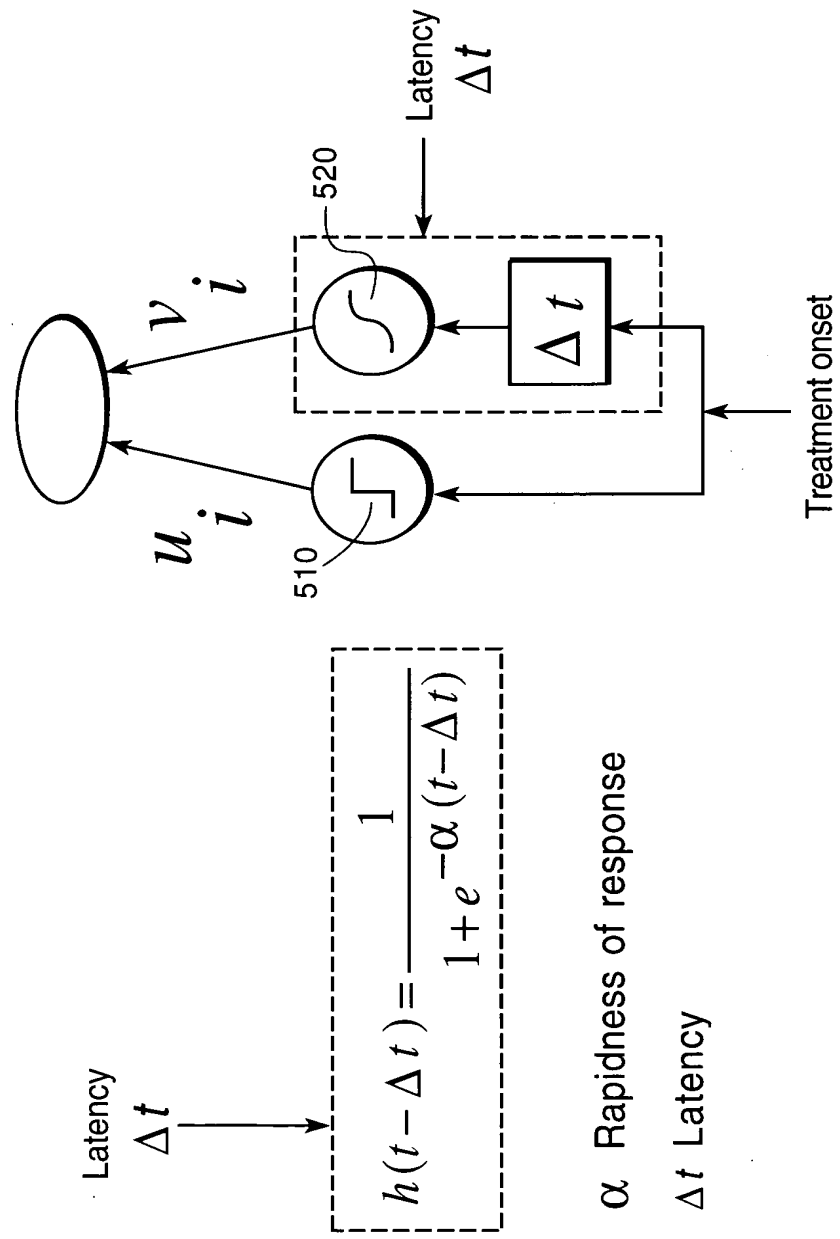


FIG. 3-6

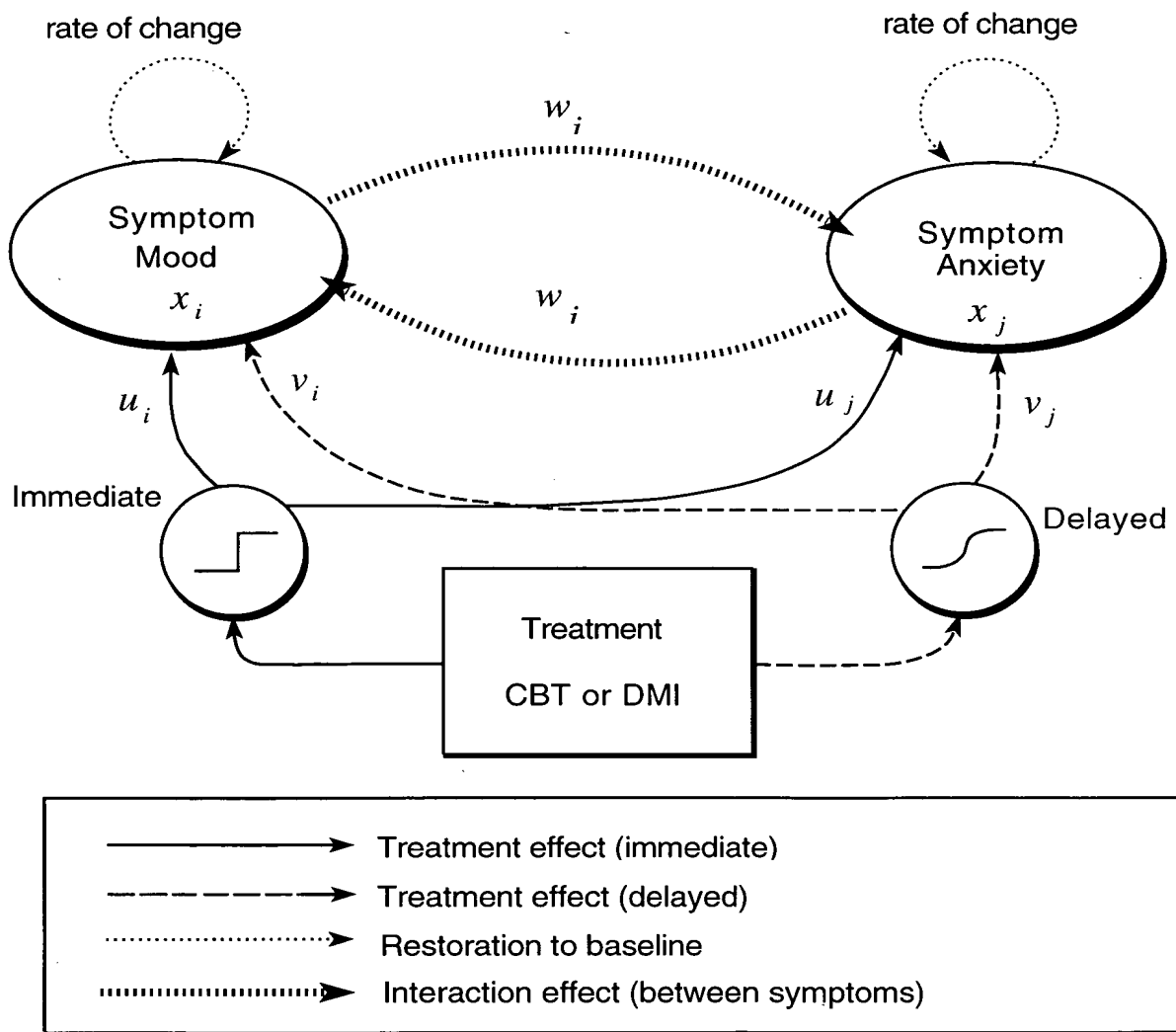


FIG. 3-7

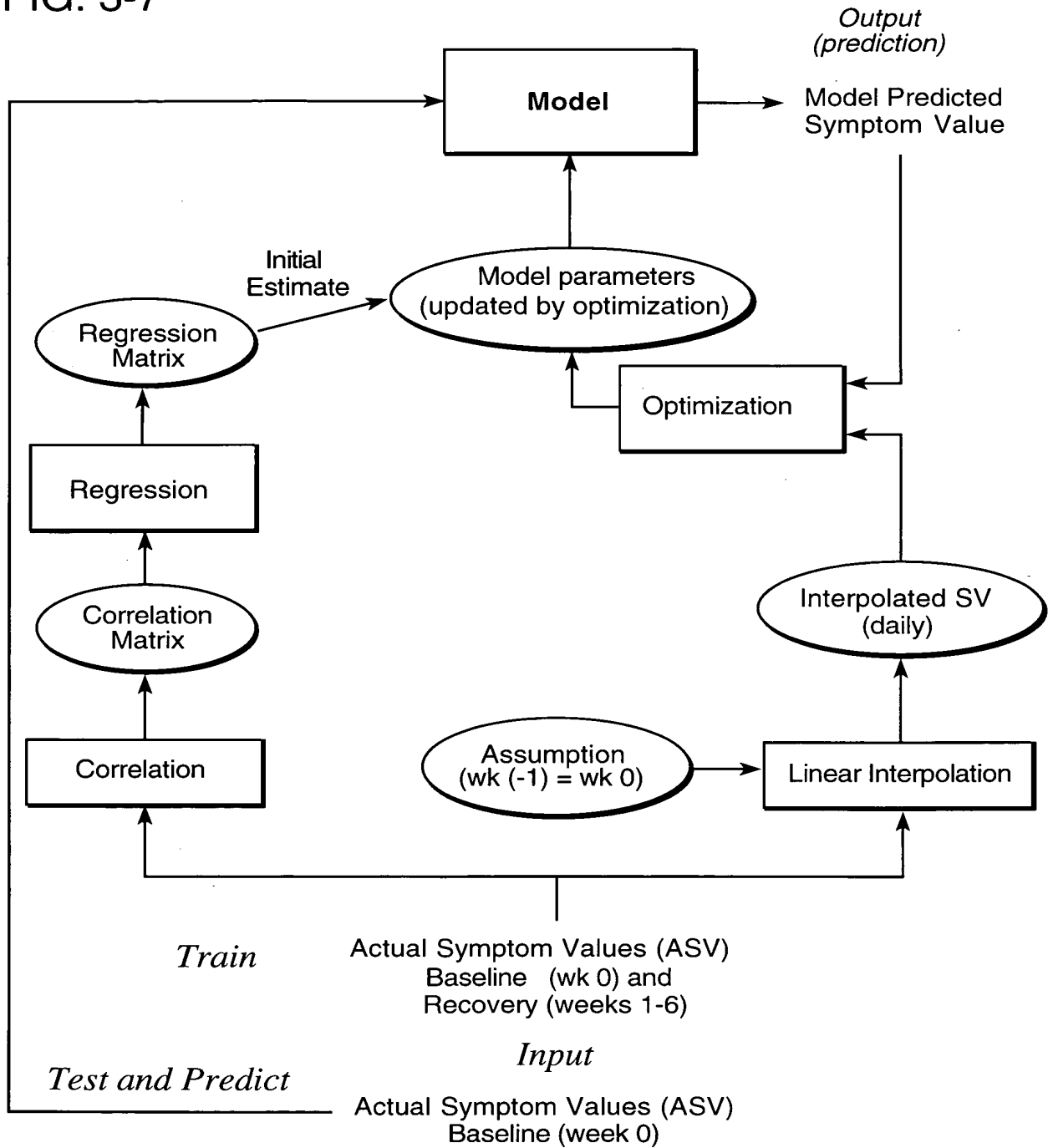


FIG. 3-8

$$L = \int_0^T \sum_{ik} \left\{ \left(X_{ik} - \hat{X}_{ik} \right)^2 + \mu_{ik} \left[\hat{X}_{ik} - f \left(\hat{X}_{ik} \right) \right] \right\} dt + K \sum_j P_j^2 \quad \begin{matrix} \text{810} & & \text{820} \\ & \text{estimated} & \text{actual} \end{matrix}$$

Obtain optimized parameters

- fit patient data
- train on entire recovery period
- minimize error term L
- gradient descent on parameters

L	=	Error term
k	=	patients
i	=	symptoms
j	=	parameter
x	=	data

FIG. 3-9A

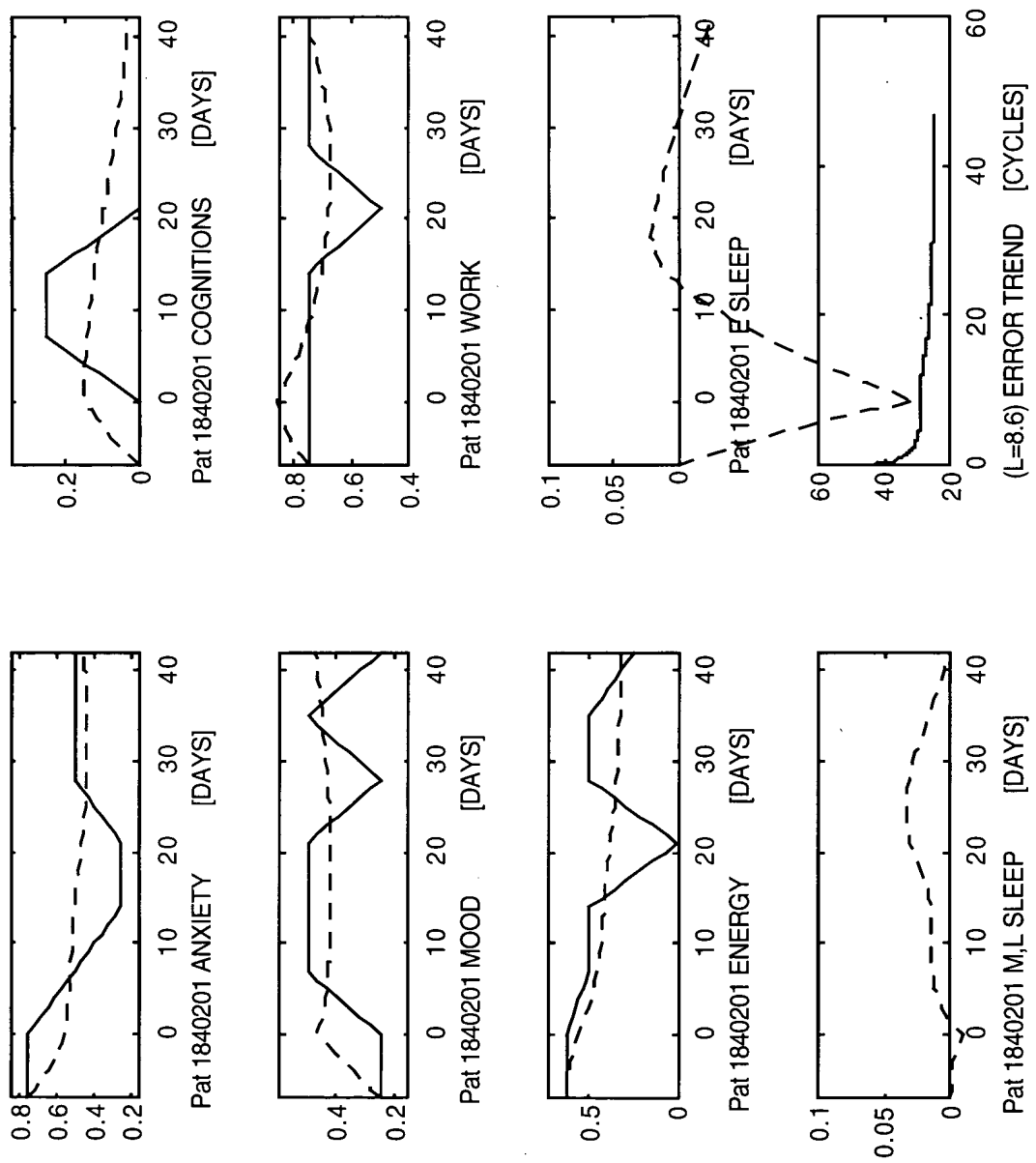


FIG. 3-9B

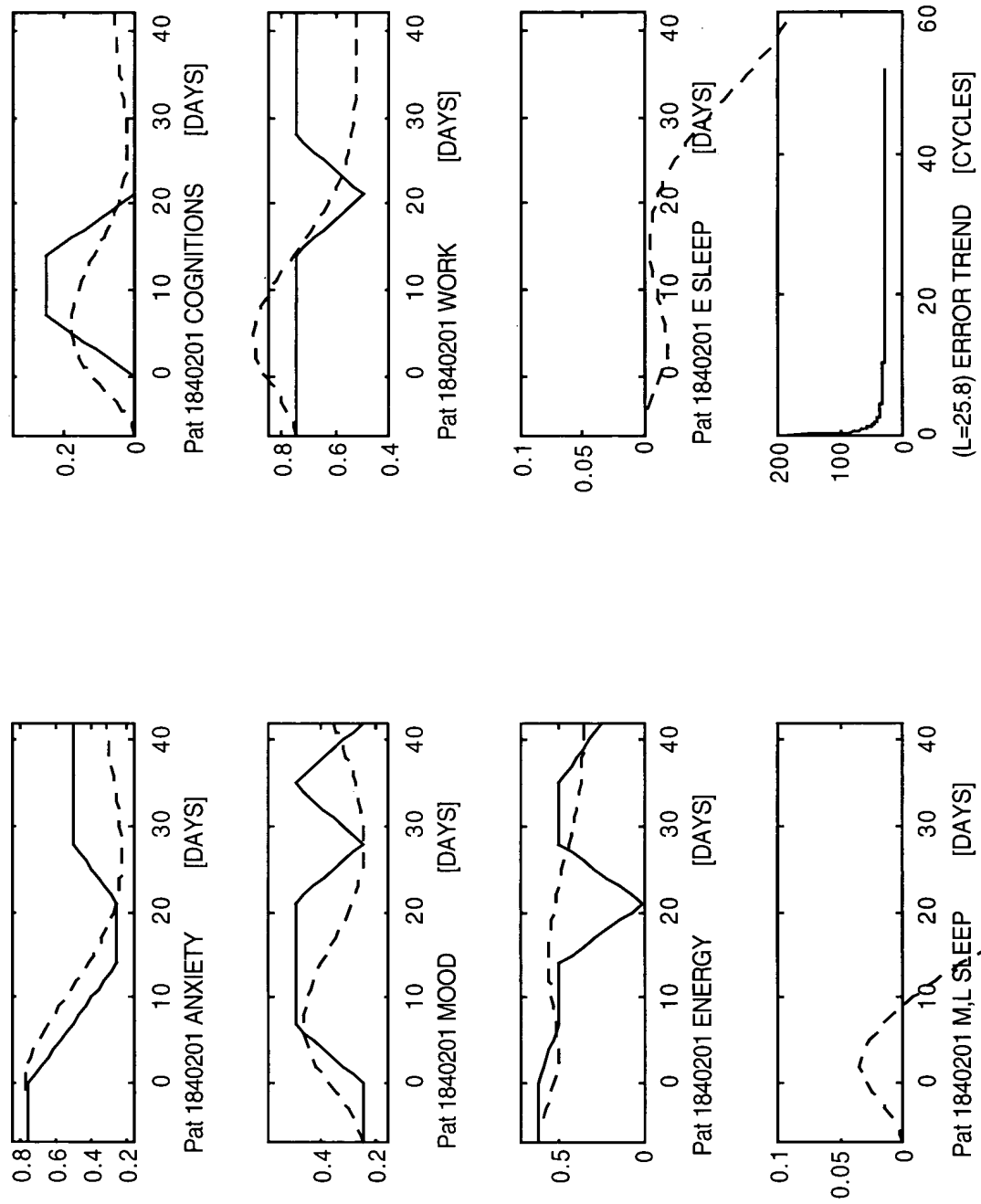


FIG. 3-10A

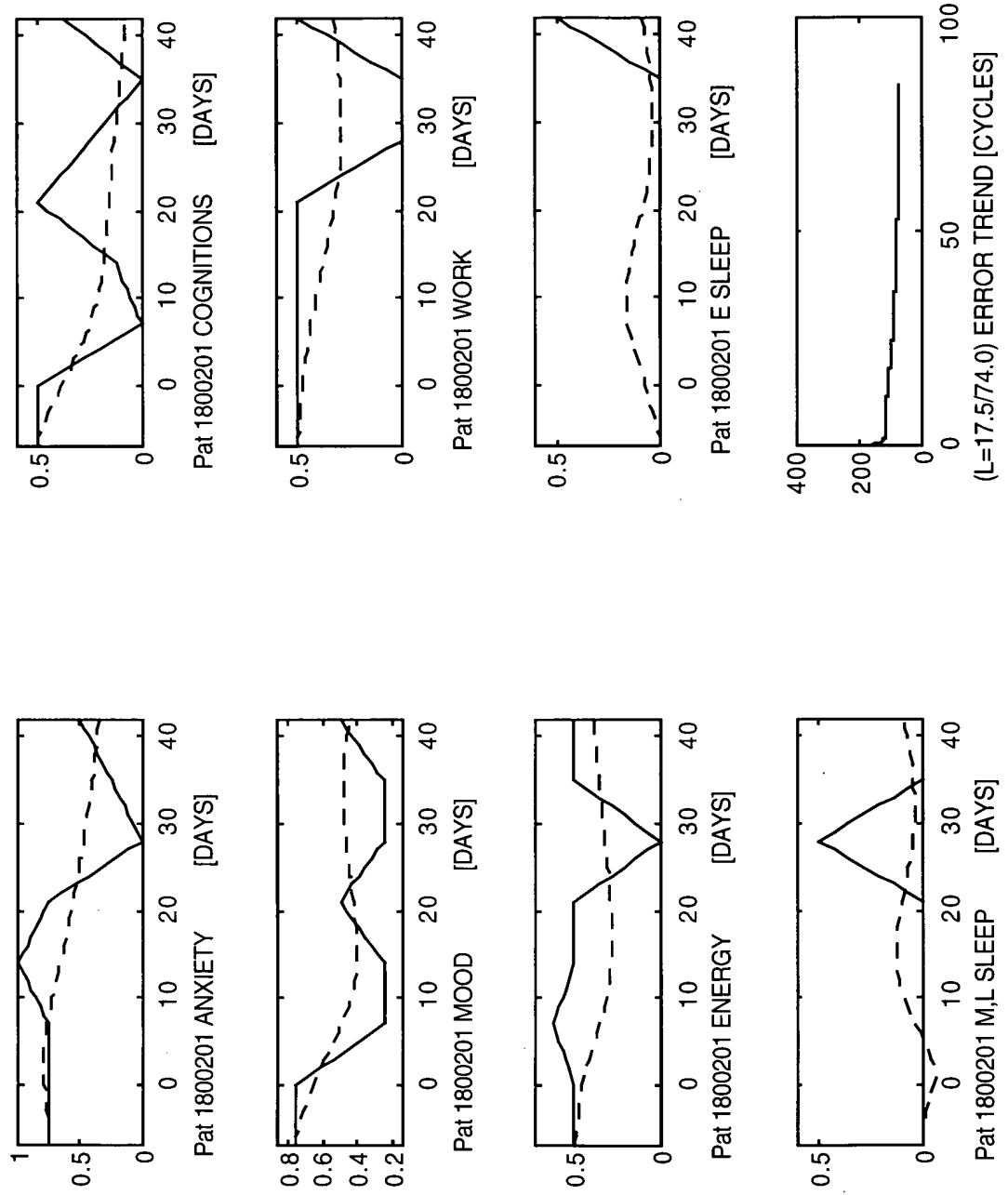


FIG. 3-10B

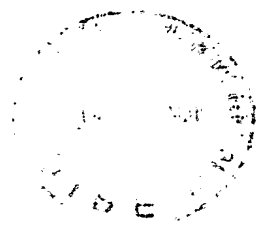
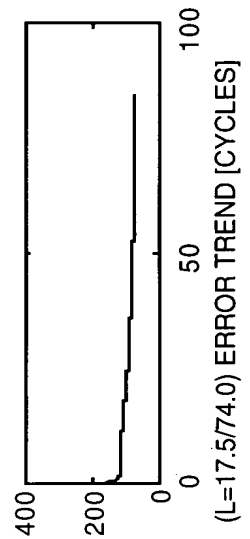
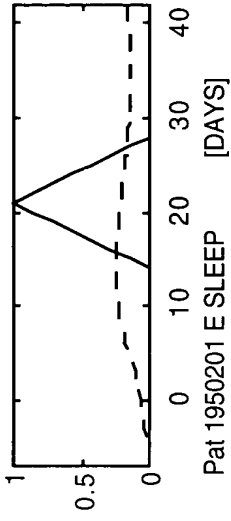
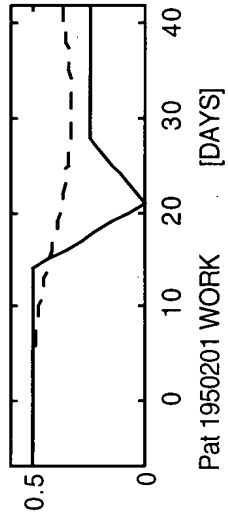
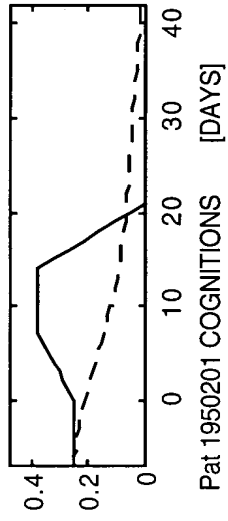
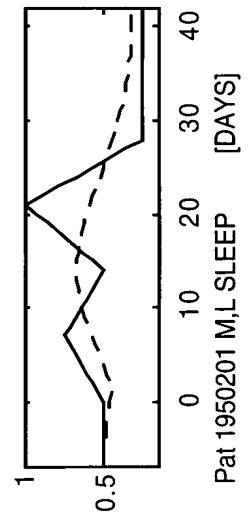
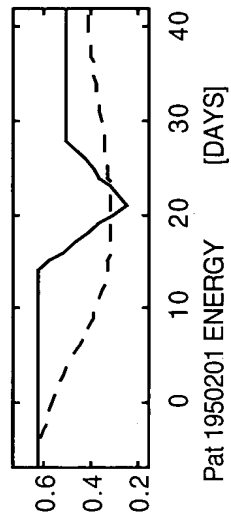
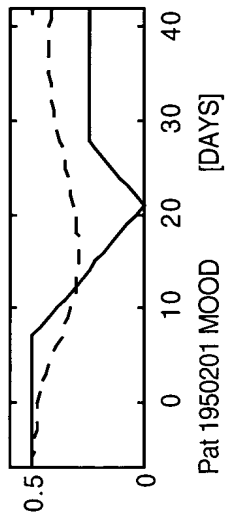
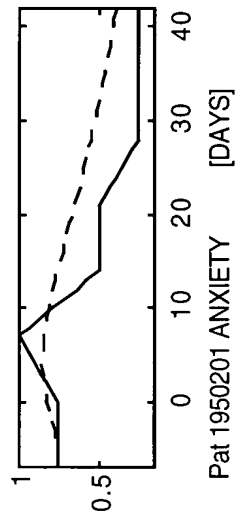


FIG. 3-10C

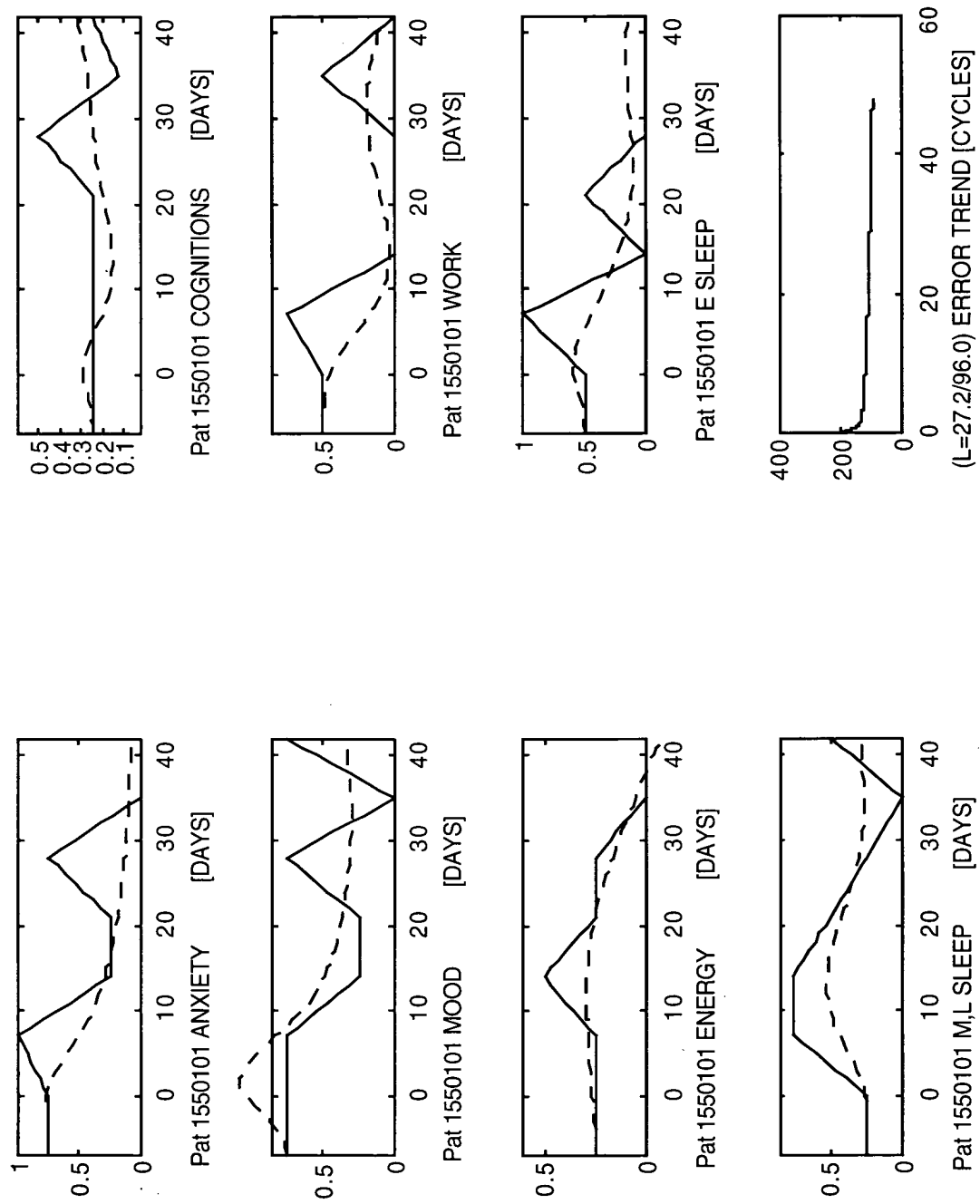


FIG. 3-10D

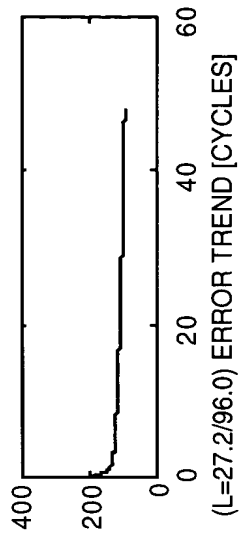
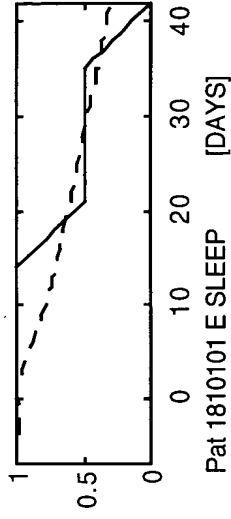
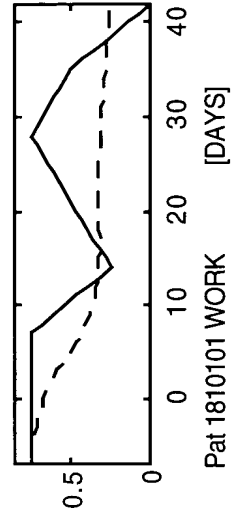
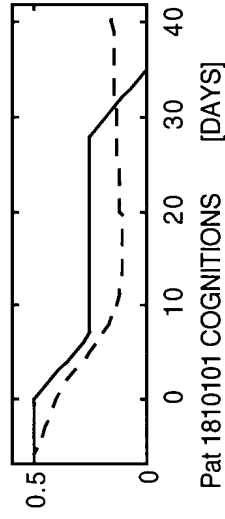
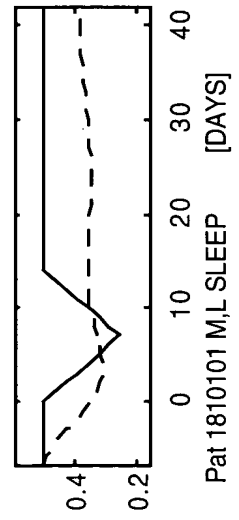
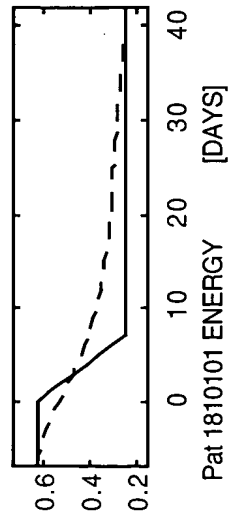
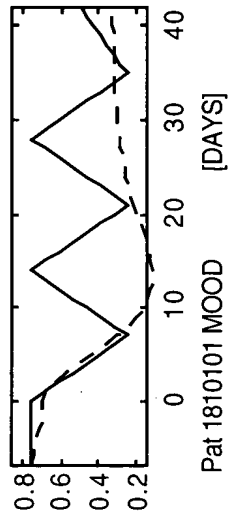
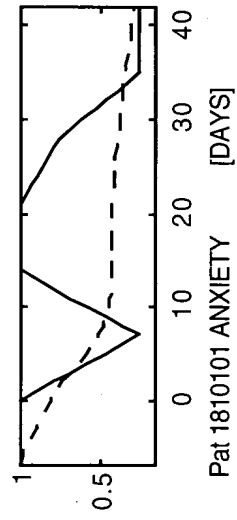


FIG. 3-11A

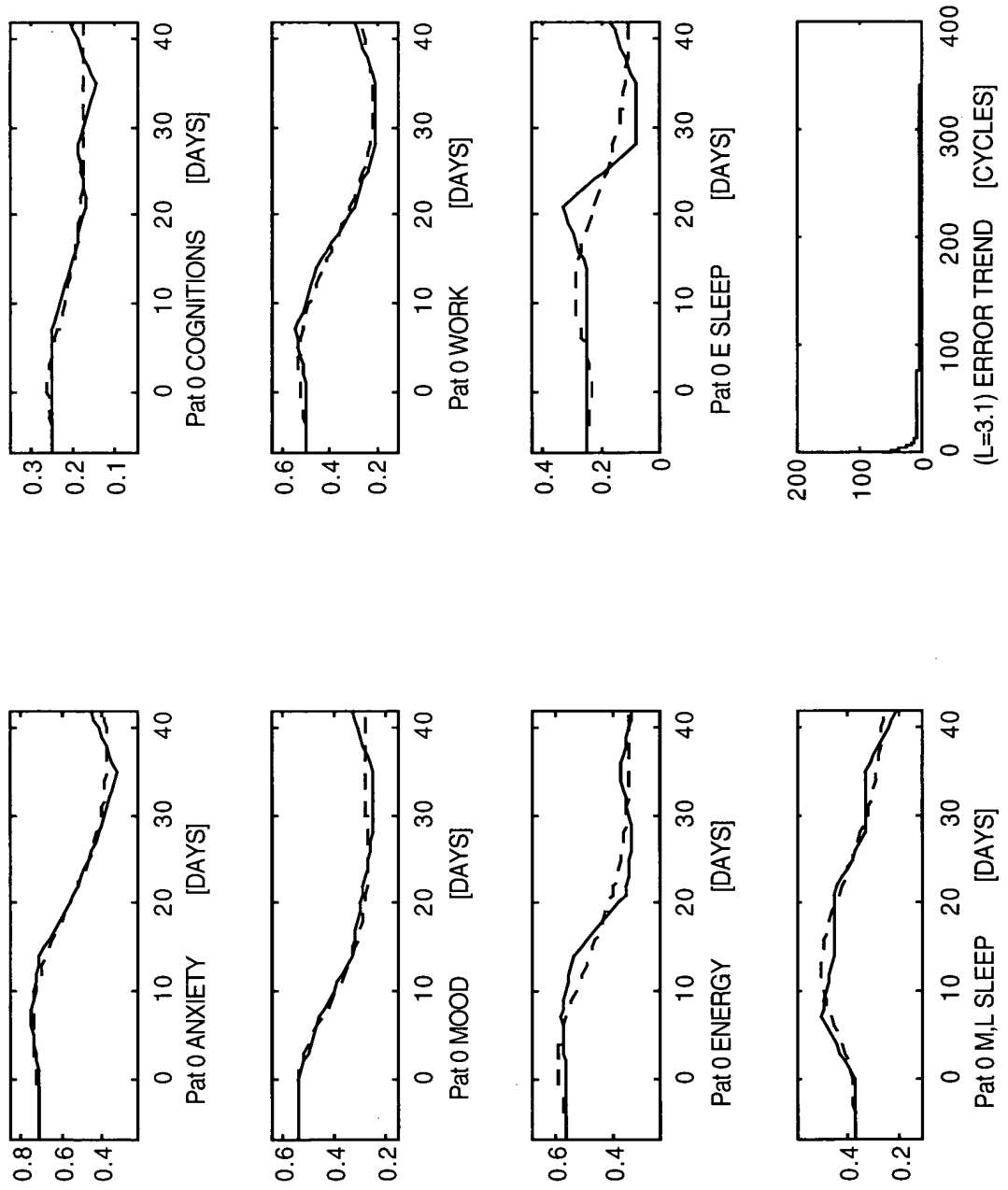


FIG. 3-11B

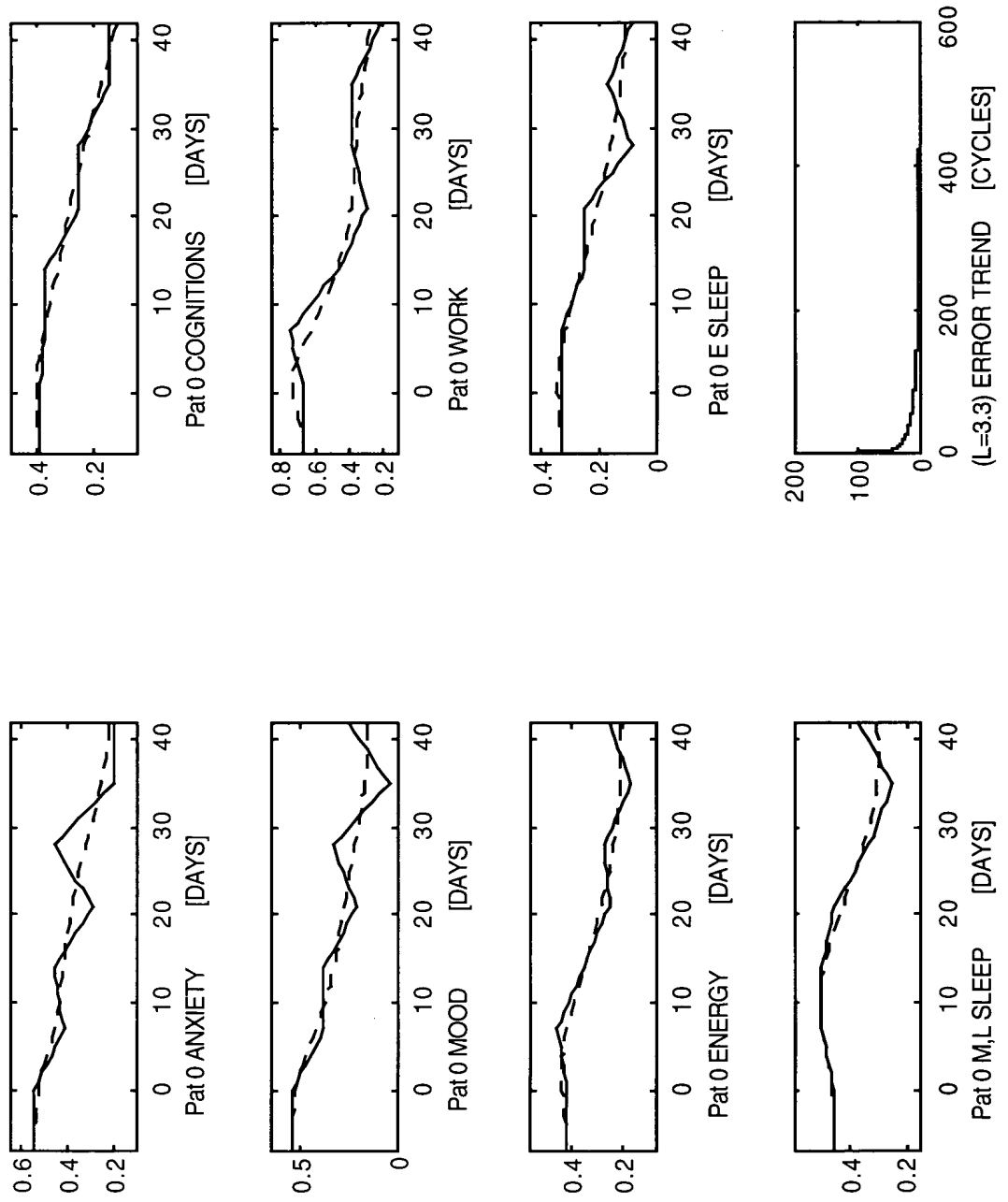


FIG. 3-12

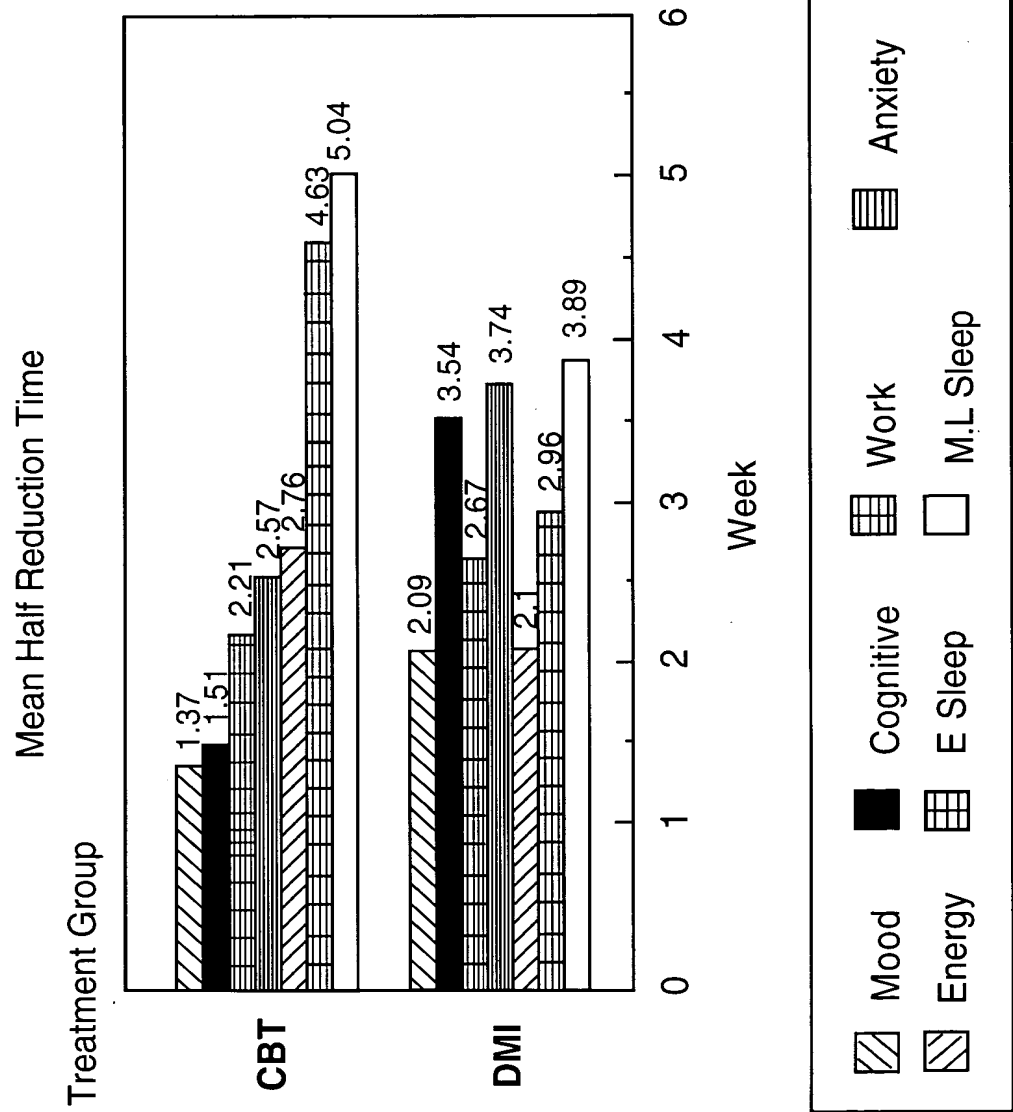


FIG. 3-13

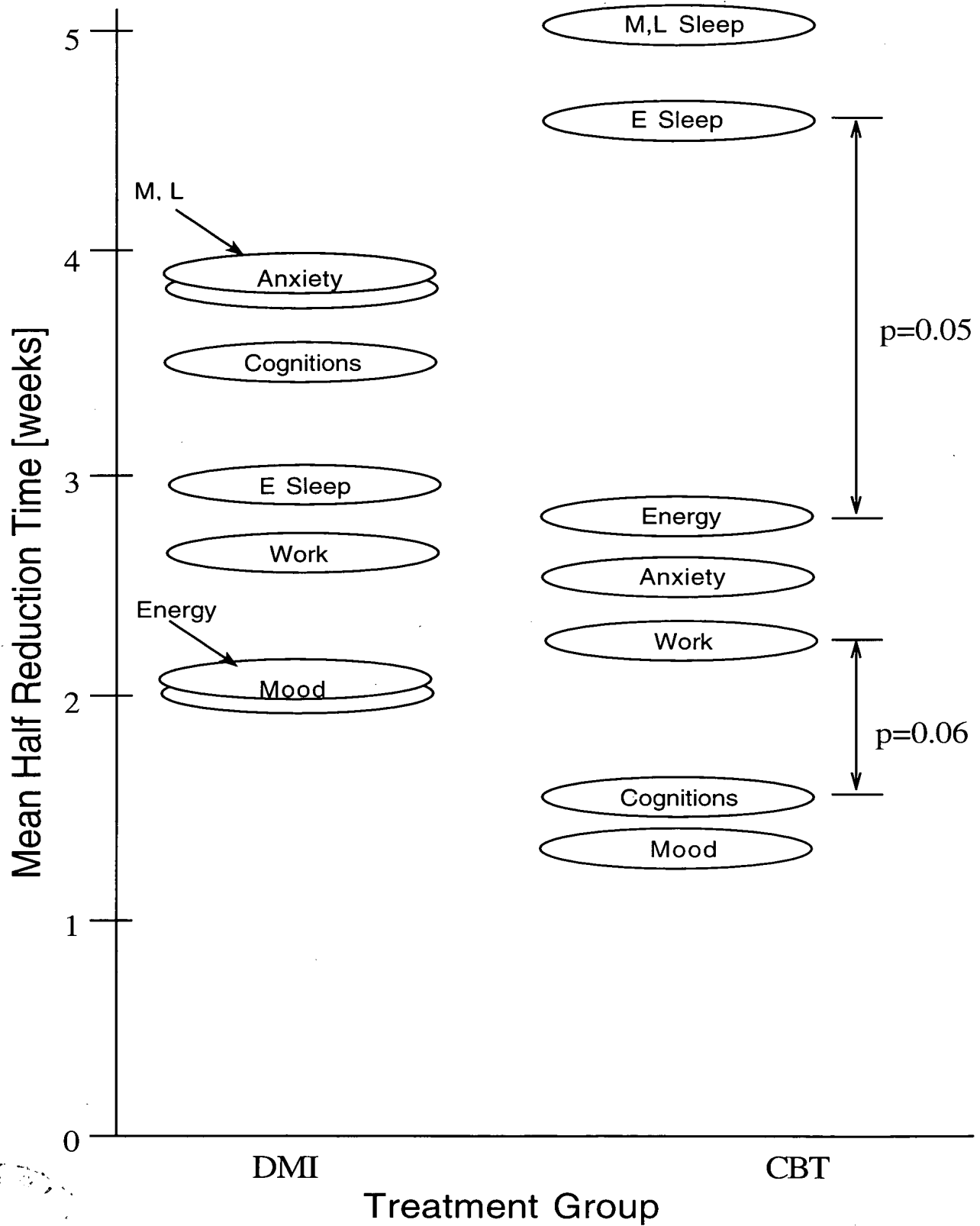
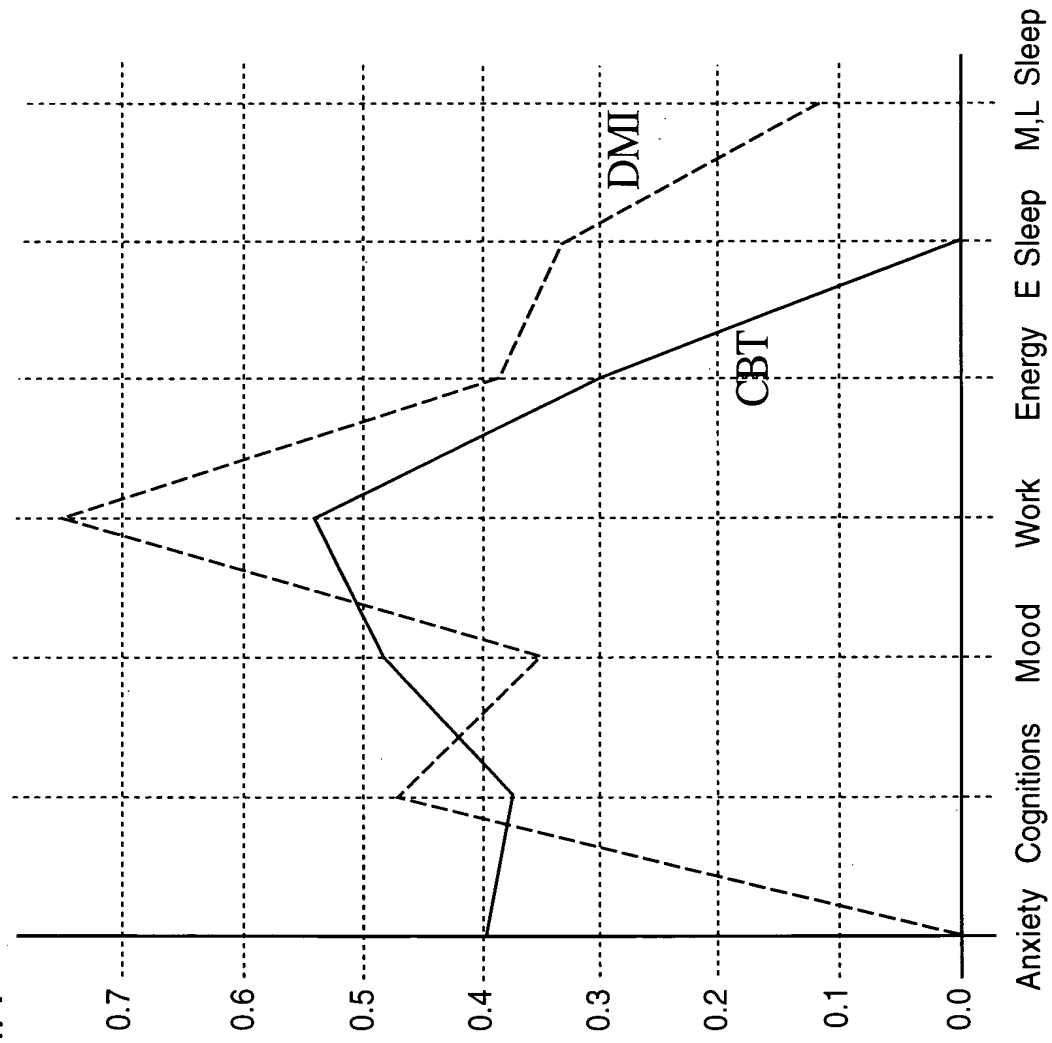


FIG. 3-14A



(a) Immediate Treatment Effects

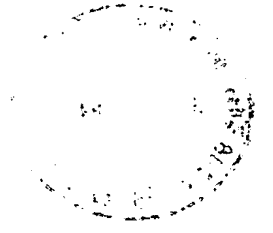


FIG. 3-14B

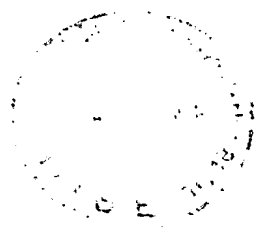
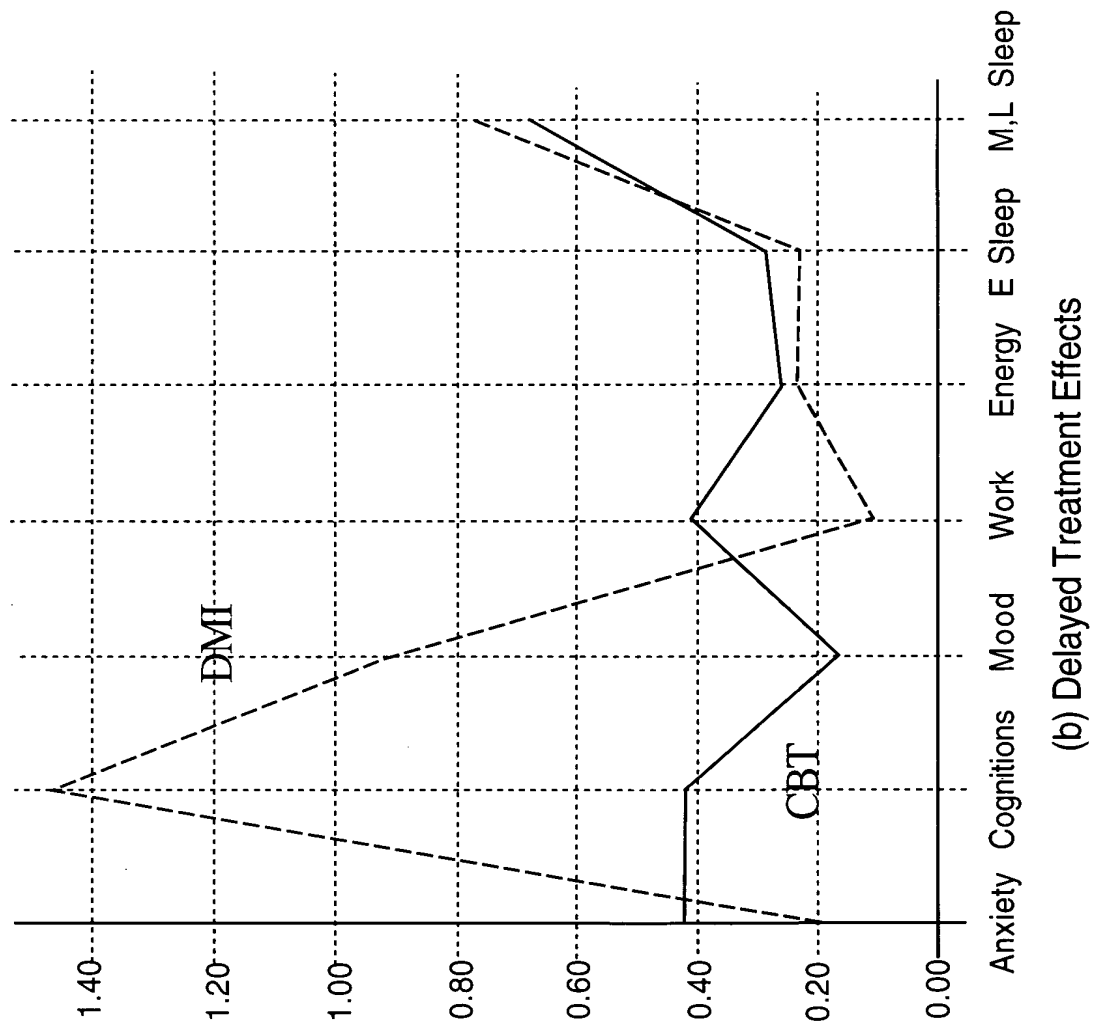


FIG. 3-15

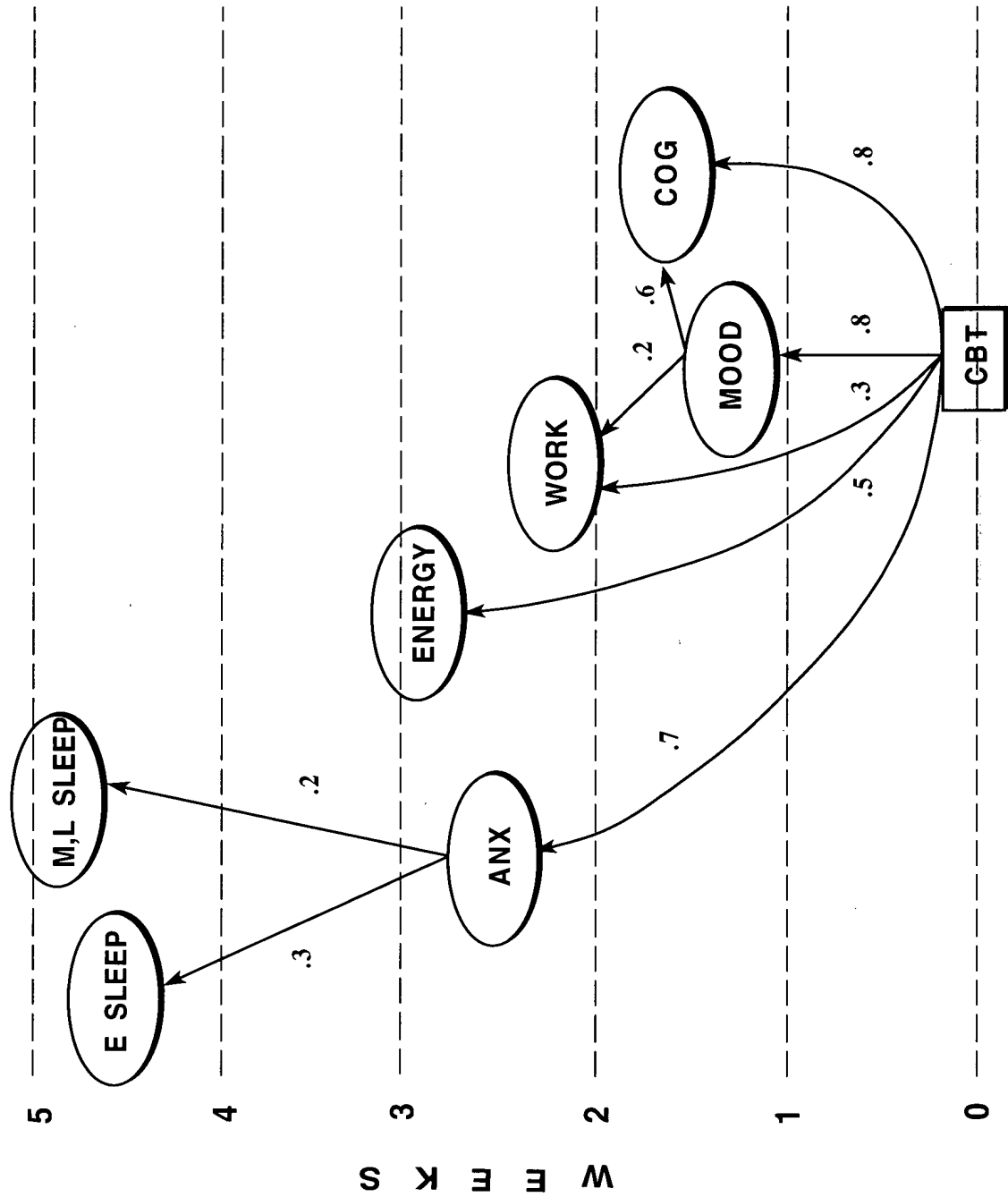


FIG. 3-16

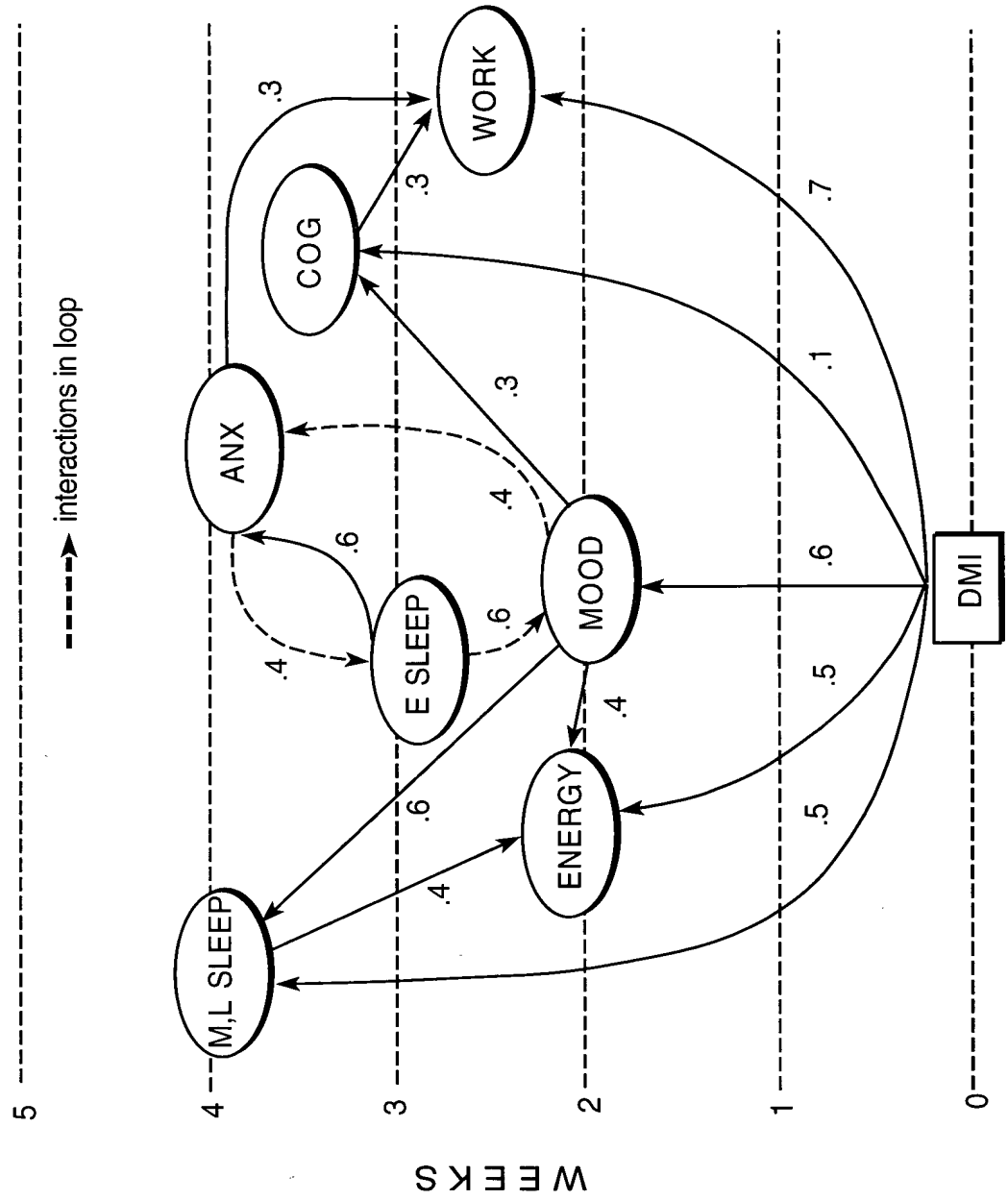


FIG. 3-17

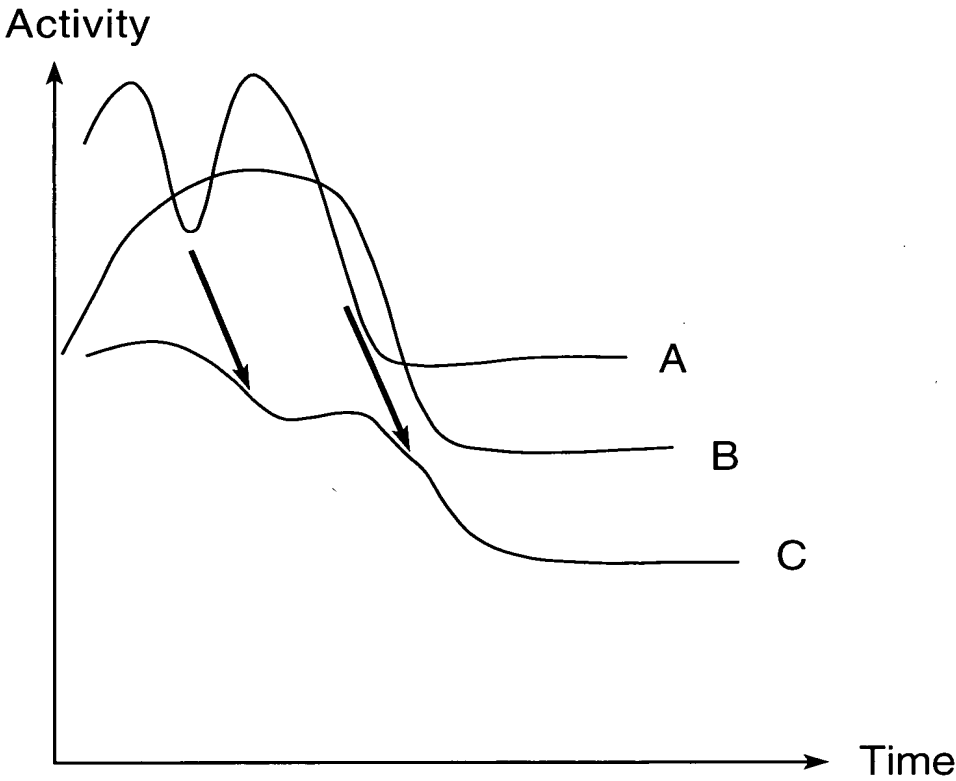


FIG. 4-1

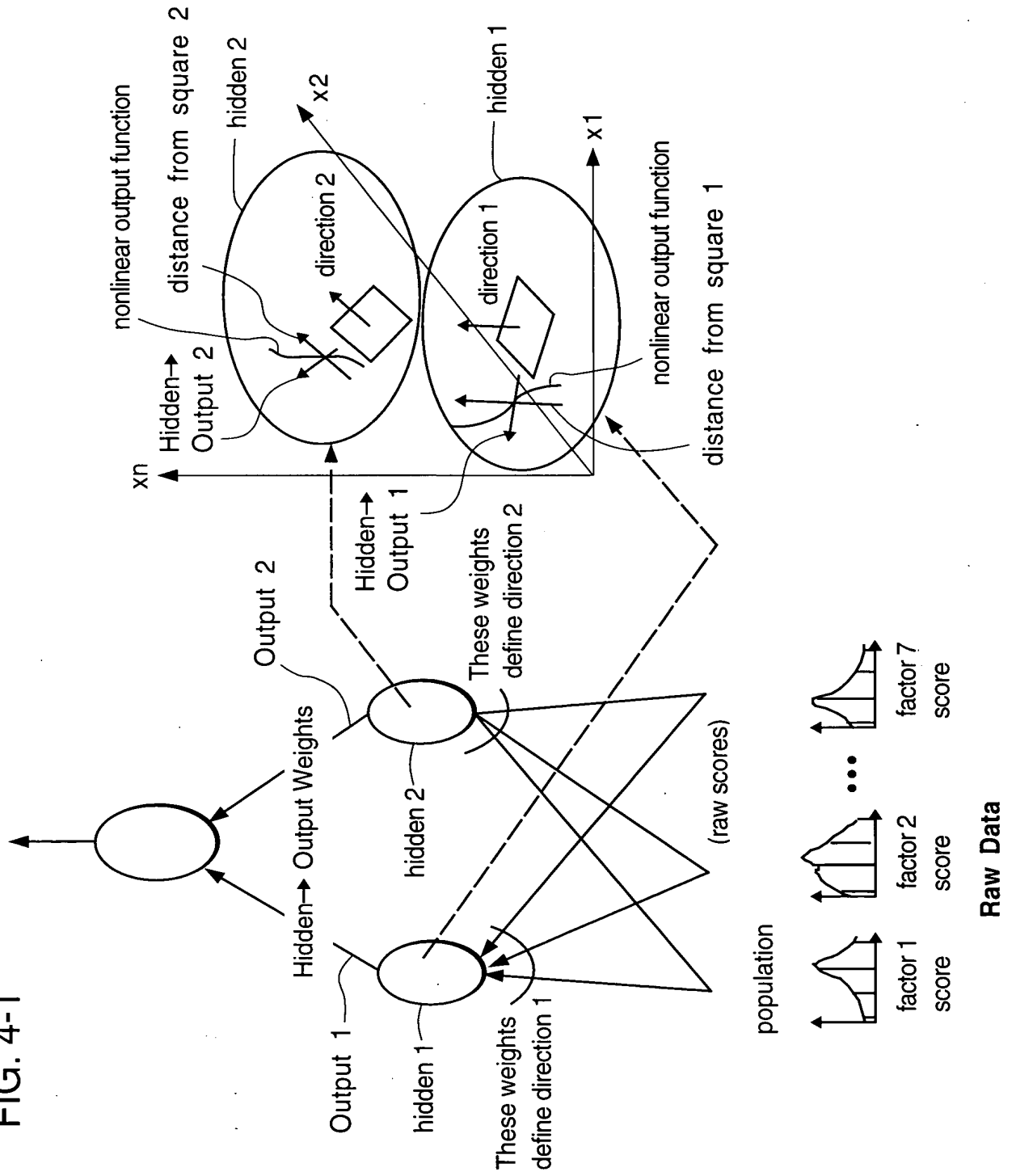


FIG. 4-2

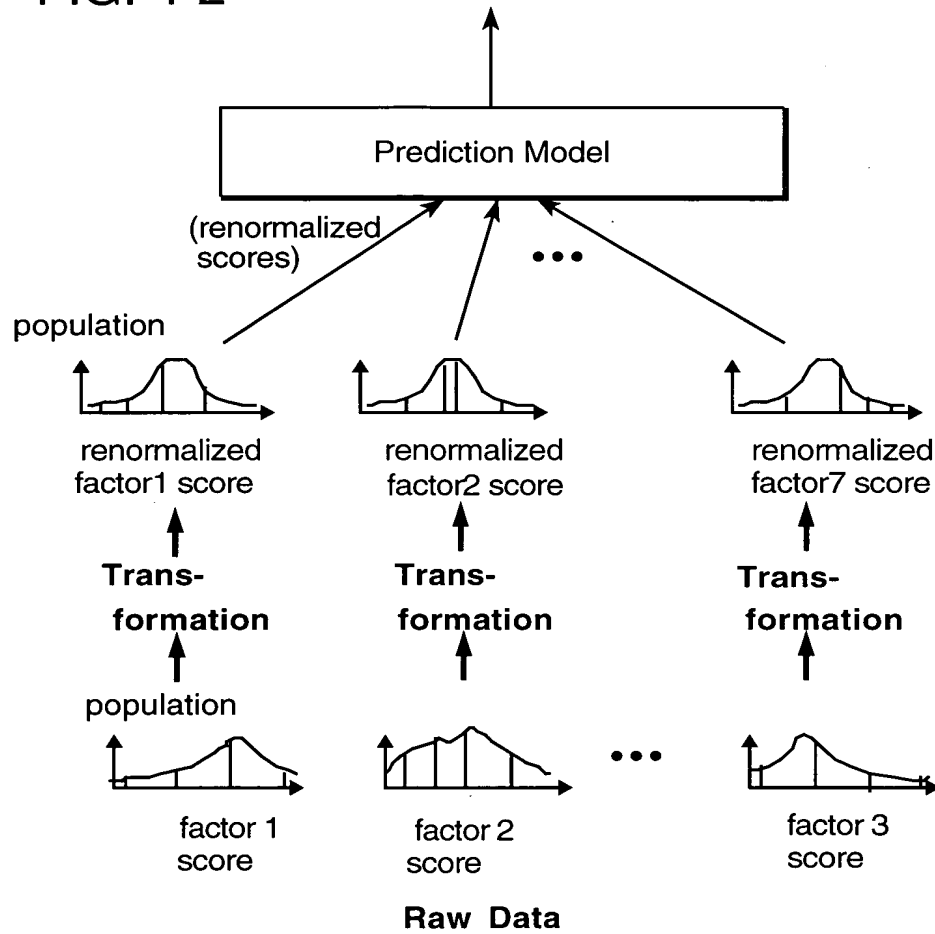


Table 4.1

Prediction of Outcome from Baseline Symptoms														
Symptom	Treatment													
HDRS Item	Other	Tricyclic							MAOI		SSRI	Psychotherapy		ECT
		Ami	Nor	IMI	DMI	Clo	Lev	Map	Phe	Tran	Flu	IPT	CBT	ECT
Severity	5,9 -	10 -		10 - ,11,16+,17+	1,8	8,13	3 -	3 - ,6+	17+		1	16+	7	14 -
Depressed Mood	2	10 - ,15	4	10 - ,11	1,8	8			4	18+	1			14 -
Feelings of Guilt		15		11	1,8	8				18	1			14
Suicide	5	15		11	1,8	8				18	1			14
Insomnia: early	2	15	4	11	1,8	8			12,4	18	1			14
Insomnia: middle	2	15 -	4	11	1,8	8			12,4	18 -	1			14
Insomnia: late	2	15	4	11,12+	1,8	8			4	18 -	1			14
Work and Interests		15	4	11,12	1,8	8			11	18	1			14 -
Retardation	2	10,15	4	10,11,12+	1,8	8			4	18+	1			18
Agitation	2	10,15		10,11,12	1,8	8			12,4	18	1			14 -
Anxiety : somatic	2	10,15	4	10,11	1,8	8			4	18	1			
Anxiety : psychic	2	10,15	4	10,11	1,8	8			4	18	1			
Somatic: gastrointestinal		15 -		11	1,8	8				18	1			14 -
Somatic: general		10,15	4	10,11	1,8	8			4	18	1			
Genital symptoms		15		11,12	1,8	8			11	18	1			14
Hypochondriasis		15 -	4	11	1,8	8			4	18	1			14
Loss of Weight (or change)	2	15	4	11,12	1,8	8			12,4	18+	1			14
Insight		15+		11	1,8	8				18	1			
Diurnal variation		15	4	11,12	1,8	8			12,16	18	1			14
Depersonalization and derealization		15		11	1,8	8				18	1			
Paranoid symptoms	2	15		11	1,8	8				18	1			
Obsessive, and compulsive	2	15		11	1,8	8				18	1			

Table 4.2

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